358

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

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L. F. BLANKENSHIP
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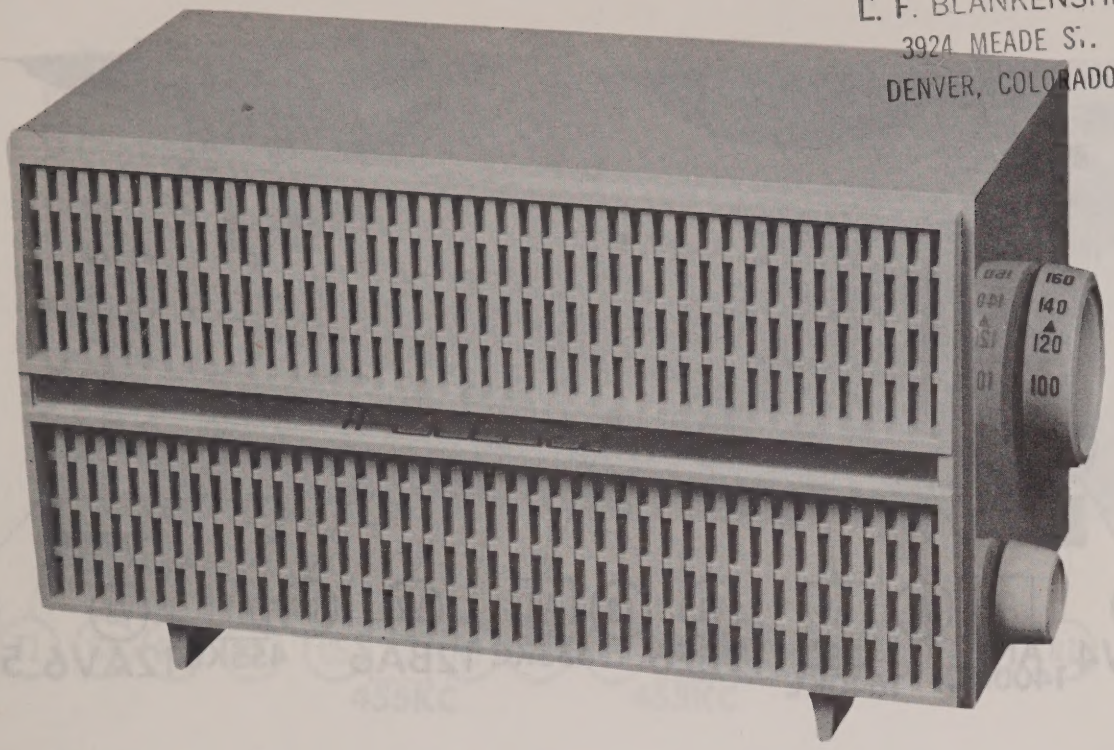
DENVER, COLORADO

AIRLINE MODELS GEN-1655A, -1656A, -1657A, -1658A, -1660A, -1661A




AIRLINE MODELS GEN-1655A, -1656A, -1657A, -1658A, -1660A, -1661A

| | |
|---|---|
| TRADE NAME | Airline Models GEN-1655A, GEN-1656A, GEN-1657A, GEN-1658A, GEN-1660A, GEN-1661A |
| SUPPLIER | Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill. |
| TYPE SET | AC-DC Operated AM Receiver |
| TUBES (Five) | Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier |
| POWER SUPPLY | 110-120 Volts AC-DC — RATING .28 Amp. @ 117 Volts AC (27 Watts) |
| TUNING RANGE—BROADCAST | 540-1600KC |

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in the same relative position to chassis as when the receiver is in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | .05MFD | High side to antenna stator lug on tuning gang. Low side to B-. | 455KC (400∿Mod) | Tuning gang fully open | Across voice coil | A1, A2, A3, A4 | Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. |
| 2. | | Loop | 1640KC | " | " | A5 | Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. |
| 3. | | " | 1400KC | Tune to 1400KC signal | " | A6 | Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. |

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# PARTS LIST AND DESCRIPTIONS

AIRLINE
MODEL GEN-1655A

## TUBES ( GENERAL ELECTRIC, SYLVANIA )

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | Converter | 12BE6 | |
| V2 | IF Amplifier | 12BA6 | |
| V3 | Det.-AVC-AF Amp. | 12AV6 | |

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V4 | Output | 50C5 | |
| V5 | Rectifier | 35W4 | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT. | AIRLINE PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A | 50 | 150 | E3214 | PRS150V3050 | BBRD5315 | TCD497 | TDLD-8 | FMD-301 | TVA-2450 |
| B | 30 | 150 | | | | | | | |

## FIXED CAPACITORS

**Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | AIRLINE PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C2 | .05 | 400 | | BPD-05 | DF-503 | CUB4S5 | | GEM-415 | 4TM-S5 | |
| C3 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C4 | .05 | 400 | | BPD-05 | DF-503 | CUB4S5 | | GEM-415 | 4TM-S5 | |
| C5 | .05 | 400 | | BPD-05 | DF-503 | CUB4S5 | | GEM-415 | 4TM-S5 | |

## CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| | RESISTANCE | WATTS | AIRLINE PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | |
| R1A | 500K | ½ | E2518 | B-60 | A47-500K-Z | Q13-133 | U48 | Volume |
| B | Shaft | | | Not Req. | KSS-3 | Not Req. | Not Req. | |
| C | Switch | | | KB-1 | SWE-12 | 76-1 | US-26 | |

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

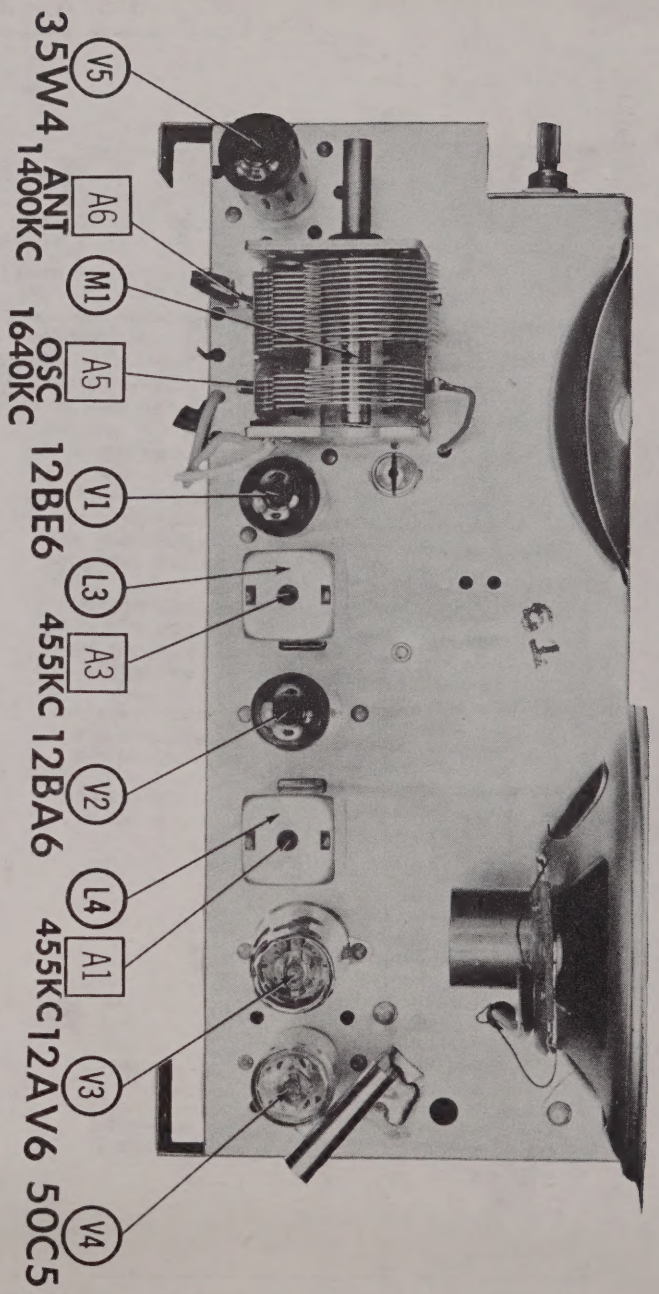
| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | AIRLINE PART No. | IRC PART No. | |
| R2 | 22K | | | BTS-22K | |
| R3 | 3.3Meg | | | BTS-3.3Meg | |
| R4 | 180Ω | | | BTS-180 | |

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | AIRLINE PART No. | IRC PART No. | |
| R5 | 150Ω | | | BTS-150 | |
| R6 | 1500Ω | 1 | | BTA-1500 | |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | AIRLINE PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T1 | 2700Ω | 3-4Ω | E1113 ①<br>E1114 ③ | Z1101 | A-3025 | A-3332 | 26S58 ② | S-12X | ① Used in Models GEN-1655A, GEN-1656A, GEN-1657A, GEN-1658A<br>② Use original channel mounting frame<br>③ Used in Models GEN-1660A, GEN-1661A |

## CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## SPEAKER

| ITEM No. | TYPE | | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|
| | SIZE | FIELD | V. C. IMP. | AIRLINE PART No. | QUAM PART No. | |
| SP1 | 4" | PM | 3-4Ω | E1014 ① | 4A07 | ① Used in all Models |
| | 4" | PM | | E1017 ② | | ② Used in Models GEN-1660A, GEN-1661A |

## COILS (RF-IF)

| ITEM No. | USE | REPLACEMENT DATA | | | | NOTES |
|---|---|---|---|---|---|---|
| | | AIRLINE PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | |
| L1 | Loop Ant. | E6016 | | | | Includes cabinet back (Note 1) |
| L2 | Osc. Coil | E6127 | | | 69-OSC * | * Drill new mounting hole |
| L3 | Input IF | E622 | 16-6758 | BC-352 | 12-C1 | |
| L4 | Output IF | E622 | 16-6758 | BC-353 | 12-C2 | |

Note 1. Part number E6017 used in Models GEN-1660A, GEN-1661A.

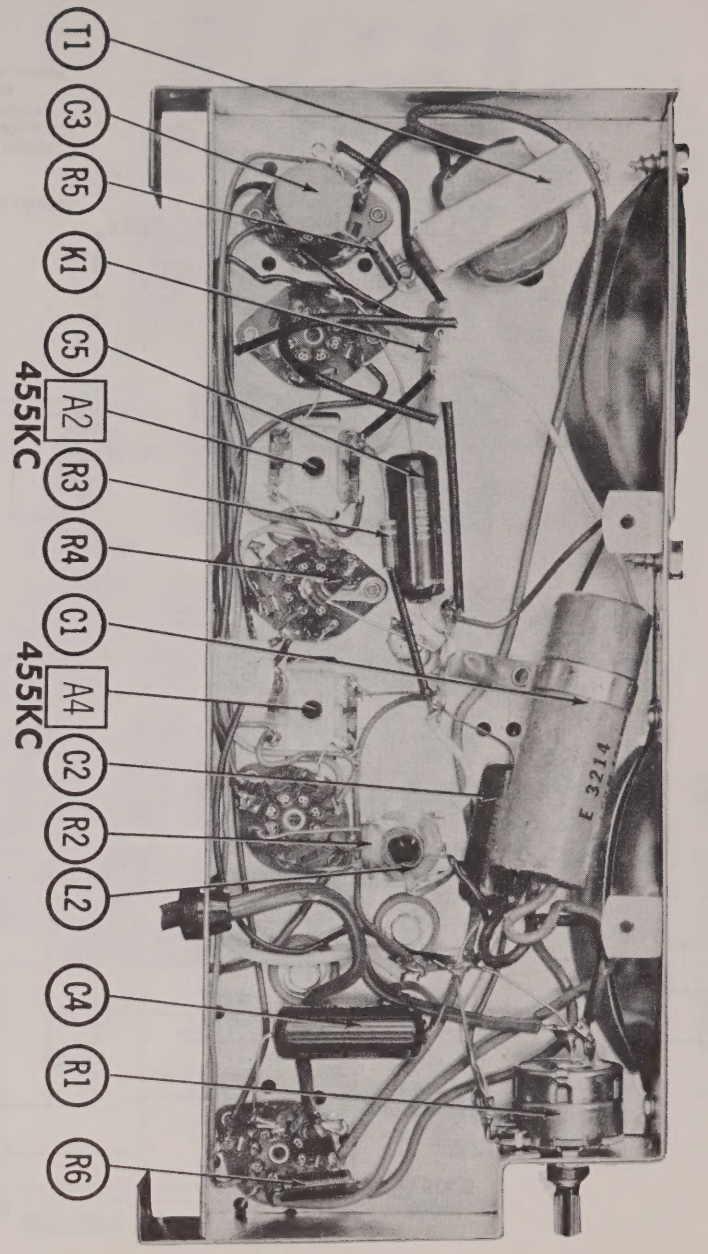
## COMPONENT COMBINATIONS

| ITEM No. | USE | DESCRIPTION | AIRLINE PART No. | REPLACEMENT DATA | |
|---|---|---|---|---|---|
| K1 | Det.-Audio Net. | 5000MMF, 2000MMF, 250MMF, 220MMF, 6.8Meg, 470K, 470K | E3015 | Aerovox | PA-113-1 |
| | | | | Centralab | PC-150 |
| | | | | Cornell-Dubilier | 116TM1 |
| | | | | Erie | 1408-01 |
| | | | | Sprague | DT-5 |

## MISCELLANEOUS

| ITEM No. | PART NAME | AIRLINE PART No. | NOTES |
|---|---|---|---|
| M1 | Tuning Cap. | E3518 | 2 Gang (22-385MMF, 20-130MMF) |
| M2 | Switch | E1210 | Radio-Phono, slide type, Models GEN-1660A, GEN-1661A |
| | Knob | E5042W | Tuning, white, Model GEN-1656A |
| | Knob | E5042M | Tuning, mocha brown, Model GEN-1655A |
| | Knob | E5043W | Volume, white, GEN-1656A |
| | Knob | E5043M | Volume, mocha brown, Model GEN-1655A |
| | Knob | E5044I | Tuning, Ivory, Model GEN-1660A |
| | Knob | E5044T | Tuning, light turquoise, GEN-1661A |
| | Knob | E5045I | Volume, ivory, Model GEN-1660A |
| | Knob | E5045T | Volume, light turquoise, GEN-1661A |
| | Knob | | Tuning, pink, Model GEN-1658A |
| | Knob | | Tuning, mahogany, Model GEN-1657A |
| | Knob | | Volume, pink, Model GEN-1658A |
| | Knob | | Volume, mahogany, Model GEN-1657A |
| | Cabinet | E7029W | White, Model GEN-1656A |
| | Cabinet | E7029M | Mocha brown, Model GEN-1655A |
| | Cabinet | E7030I | Ivory, Model GEN-1660A |
| | Cabinet | E7030T | Light turquoise, Model GEN-1661A |
| | Cabinet | | Mahogany, Model GEN-1657A |
| | Cabinet | | Pink, Model GEN-1658A |

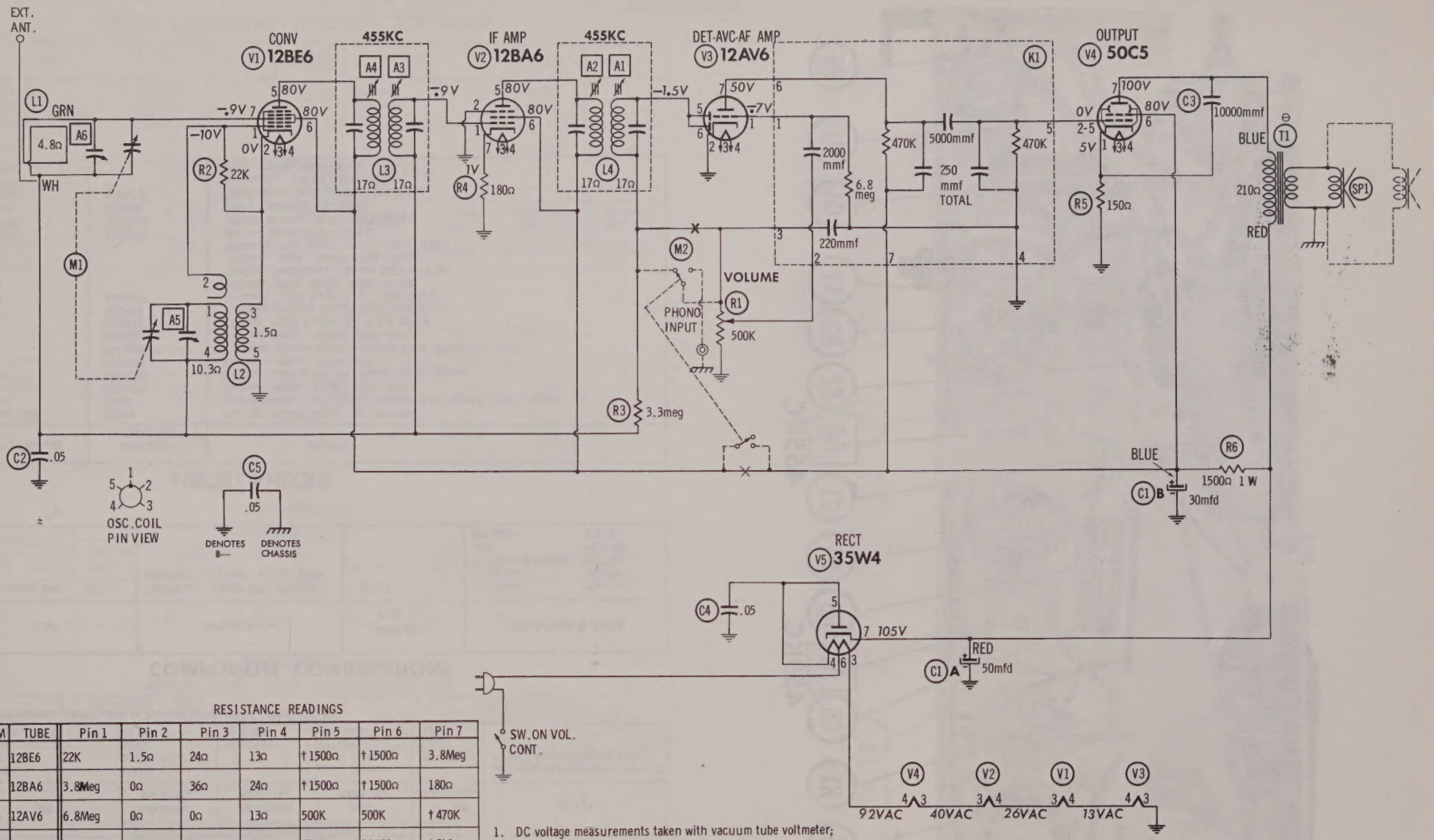
# CHASSIS—BOTTOM VIEW








AIRLINE MODEL GEN-1655A




RESISTANCE READINGS

| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 |
|---|---|---|---|---|---|---|---|---|
| V1 | 12BE6 | 22K | 1.5Ω | 24Ω | 13Ω | †1500Ω | †1500Ω | 3.8Meg |
| V2 | 12BA6 | 3.8Meg | 0Ω | 36Ω | 24Ω | †1500Ω | †1500Ω | 180Ω |
| V3 | 12AV6 | 6.8Meg | 0Ω | 0Ω | 13Ω | 500K | 500K | †470K |
| V4 | 50C5 | 150Ω | 470K | 36Ω | 80Ω | 470K | †1500Ω | †210Ω |
| V5 | 35W4 | NC | NC | 80Ω | 120Ω | 120Ω | 110Ω | 50K |

† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to commom negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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# ARVIN
# MODEL 3561 (Ch. 1.40600)

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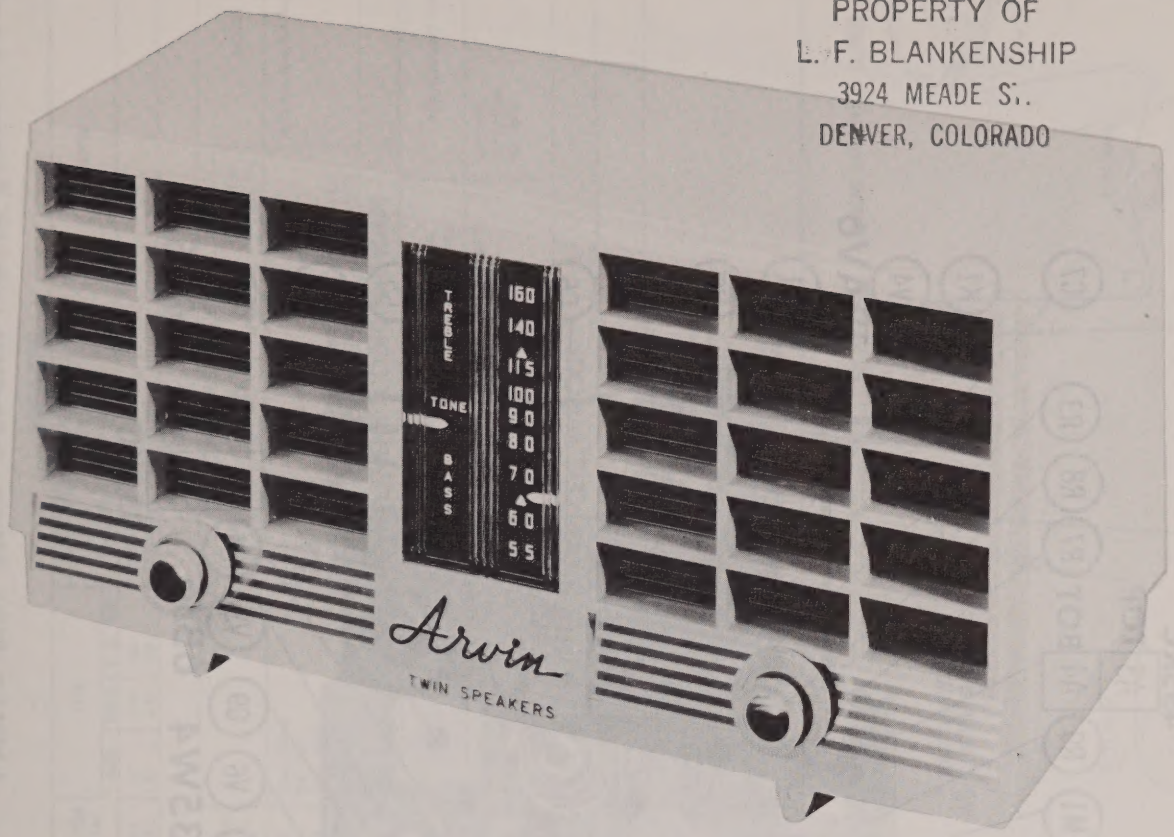
ARVIN
MODEL 3561 (Ch. 1.40600)




ARVIN
MODEL 3561 (Ch. 1.40600)

| | |
|---|---|
| TRADE NAME | Arvin Model 3561 (Ch 1.40600) |
| MANUFACTURER | Arvin Industries, Inc., Columbus, Ind. |
| TYPE SET | AC-DC Operated AM Receiver |
| TUBES (Six) | Types 6BJ6 RF Amplifier, 12BE6 Converter, 6BJ6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier |
| POWER SUPPLY | 110-120 Volts AC-DC RATING .31 Amp. @ 117 Volts AC |
| TUNING RANGE—BROADCAST | 540KC - 1620KC |

## ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in same relative position to chassis as when receiver in in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | .05MFD | High side to pin 7 (grid) of 12BE6 (V2). Low side to B-. | 455KC (400∿Mod) | Tuning gang fully open | Across voice coil | A1, A2, A3, A4 | Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. |
| 2. | " | " | 1670KC | " | " | A5 | Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. |
| 3. | | Loop | 1400KC | Tune to 1400KC signal | " | A6, A7 | " |
| 4. | | " | 600KC | Tune to 600KC signal | " | A8, A9 | Adjust for maximum output while rocking tuning gang. |

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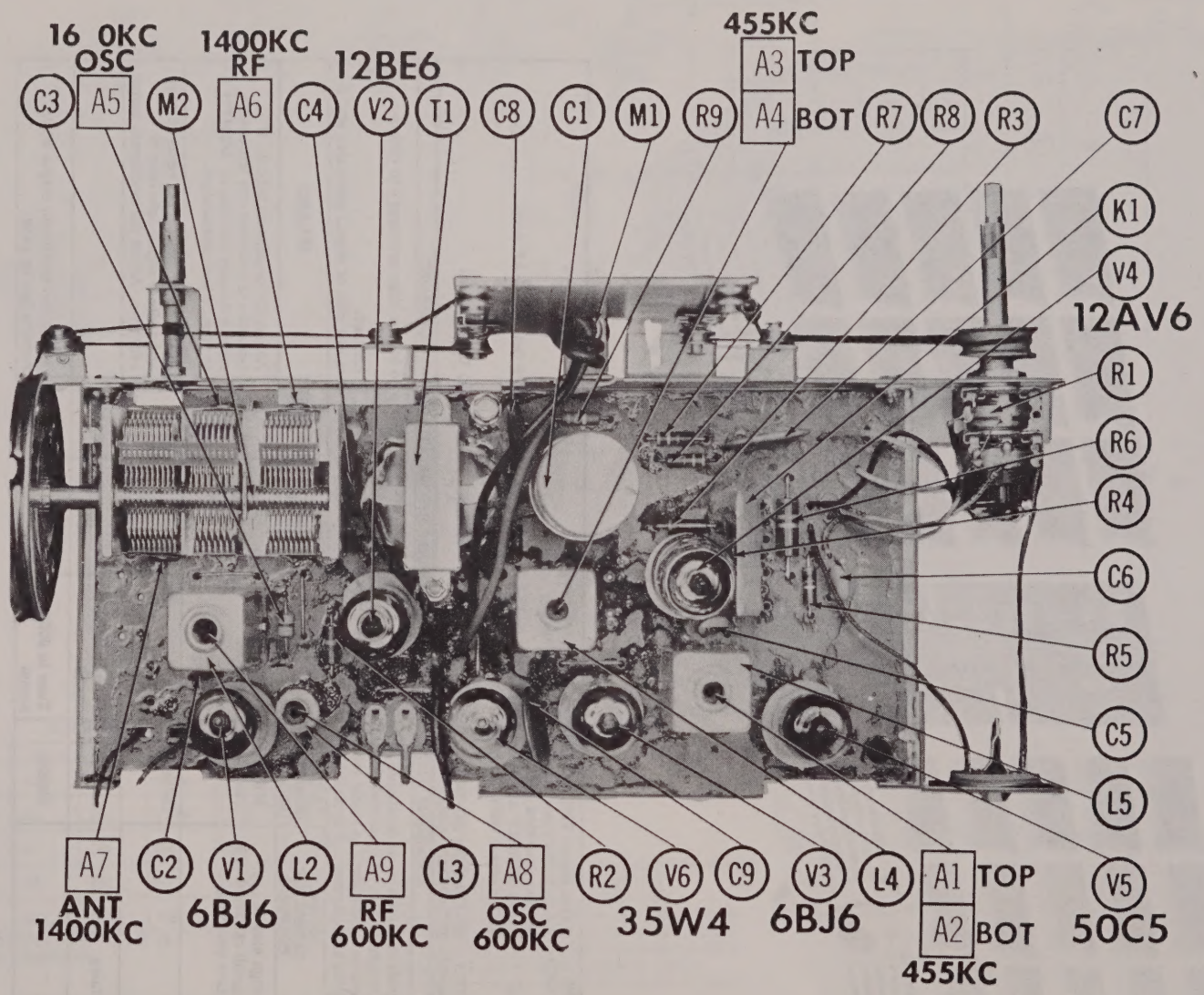



CHASSIS-TOP VIEW

# PARTS LIST AND DESCRIPTIONS

## TUBES ( GENERAL ELECTRIC, SYLVANIA )

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | RF Amplifier | 6BJ6 | |
| V2 | Converter | 12BE6 | |
| V3 | IF Amplifier | 6BJ6 | |
| V4 | Det.-AVC-AF Amplifier | 12AV6 | |
| V5 | Output | 50C5 | |
| V6 | Rectifier | 35W4 | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING CAP. | RATING VOLT. | ARVIN PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
|---|---|---|---|---|---|---|---|---|---|
| C1A | ■50 | 150 | 43711-3 | AFH3-09 | CO080 | FP311.55 | TMD-12 | T-040 | R2337 * |
| B | 20 | 150 | | | | | TD-20-150 | | |
| C | ▲30 | 150 | | | | | | | |

* Non-catalog item.

## FIXED CAPACITORS

**Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING CAP. | RATING VOLT | ARVIN PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| C2 | 100 | | 43957-1 | | TCL-100 | | | | | |
| C3 | 2.2 | | 20238-4 | NP0-SI 2.2 | TCZ-2R2 | Z006 | TCO-2.2 | | 5TCCB-V22 | |
| C4 | 20000 | | 43674-2 | BPD-02 | DD-203 | K085 | ED-.02 | | 5HK-S2 | |
| C5 | 150 | | 43957-2 | BPD-00015 | DD-151 | G046 | ED-150 | UC-5315 | 5GA-T15 | |
| C6 | 2000 | | 43674-4 | BPD-002 | DD-202 | K072 | ED-002 | DC-522 | 5HK-D2 | |
| C7 | 15000 | | 43674-3 | BPD-015 | DF-153 | | ED-015 | | 5HK-S15 | |
| C8 | 20000 | | 43674-2 | BPD-02 | DD-203 | K085 | ED-02 | | 5HK-S2 | |
| C9 | 20000 | | 43674-2 | BPD-02 | DD-203 | K085 | ED-02 | | 5HK-S2 | |

## CONTROLS

| ITEM No. | RATING RESISTANCE | RATING WATTS | ARVIN PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| R1A | 1Meg | 1/2 | 44011 | F1-52 | | | UF16A | Tone |
| B | 500K | | | R2-41 | | | UR55A | Volume |
| C | Switch | | | KB-1 | | | US-26 | |

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING OHMS | RATING WATT | ARVIN PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|
| R2 | 22K | | | BTS-22K | |
| R3 | 1Meg | | | BTS-1Meg | |
| R4 | 47K | | | BTS-47K | |
| R5 | 100Ω | | | BTS-100 | |
| R6 | 12K | 1 | | BTA-12K | |
| R7 | 330Ω | | | BTS-330 | |
| R8 | 330Ω | | | BTS-330 | |
| R9 | 330K | | | BTS-330K | |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE PRI. | IMPEDANCE SEC. | ARVIN PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T1 | 2.9K | 3-4Ω | 42700-13 | Z1004 ① | A-3025 | A-3332 | 26S58 ① | S-12X | ① Fabricate mounting. |

# PARTS LIST AND DESCRIPTIONS (Continued)

## SPEAKER

| ITEM No. | TYPE SIZE | TYPE FIELD | TYPE V. C. IMP. | REPLACEMENT DATA ARVIN PART No. | REPLACEMENT DATA QUAM PART No. | NOTES |
|---|---|---|---|---|---|---|
| SP1 | 5" | PM | 6Ω | 43365-2 | 5A1Z6 | |
| SP2 | 5" | PM | 6Ω | 43365-2 | 5A1Z6 | |

## COILS (RF-IF)

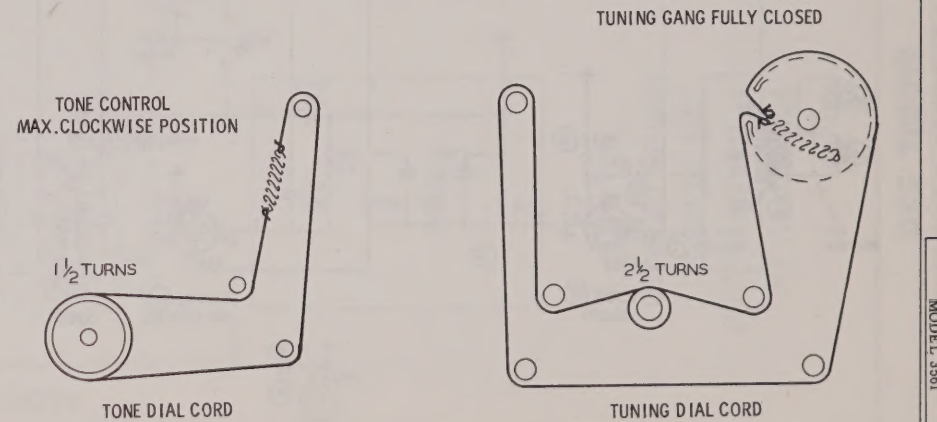
| ITEM No. | USE | REPLACEMENT DATA ARVIN PART No. | REPLACEMENT DATA MEISSNER PART No. | REPLACEMENT DATA MERIT PART No. | REPLACEMENT DATA MILLER PART No. | NOTES |
|---|---|---|---|---|---|---|
| L1 | Loop Stick | 44038-1 | | | | Includes cabinet back |
| L2 | RF Coil | 43829-1 | | | | |
| L3 | Osc. Coil | 43644-3 | | | | |
| L4 | Input IF | 43669-1 | | BC-356 | 13-PC1 | |
| L5 | Output IF | 43669-1 | | BC-357 | 13-PC2 | |

## COMPONENT COMBINATIONS

| ITEM No. | USE | DESCRIPTION | ARVIN PART No. | REPLACEMENT DATA |
|---|---|---|---|---|
| K1 | Detector-Audio Network | 220MMF 6.8Meg<br>5000MMF 470K<br>5000MMF 470K<br>125MMF<br>125MMF | 43743-2 | Aerovox PA-512<br>Centralab PCT-158<br>Sprague DT-5 |

## MISCELLANEOUS

| ITEM No. | PART NAME | ARVIN PART No. | NOTES |
|---|---|---|---|
| M1 | Dial Light | 23767 | #44 |
| M2 | Tuning Cap. | 43827 | 3 Gang |
| | Cabinet Ass'y | 44051-22 | Fawn. Includes crystal |
| | Cabinet Ass'y | 44051-17 | Ivory. Includes crystal |
| | Knob | 44232-22 | Control front, fawn |
| | Knob | 43852-22 | Control rear, fawn |
| | Knob | 44232-17 | Control front, ivory |
| | Knob | 43852-17 | Control rear, ivory |
| | Pointer | 43945 | |

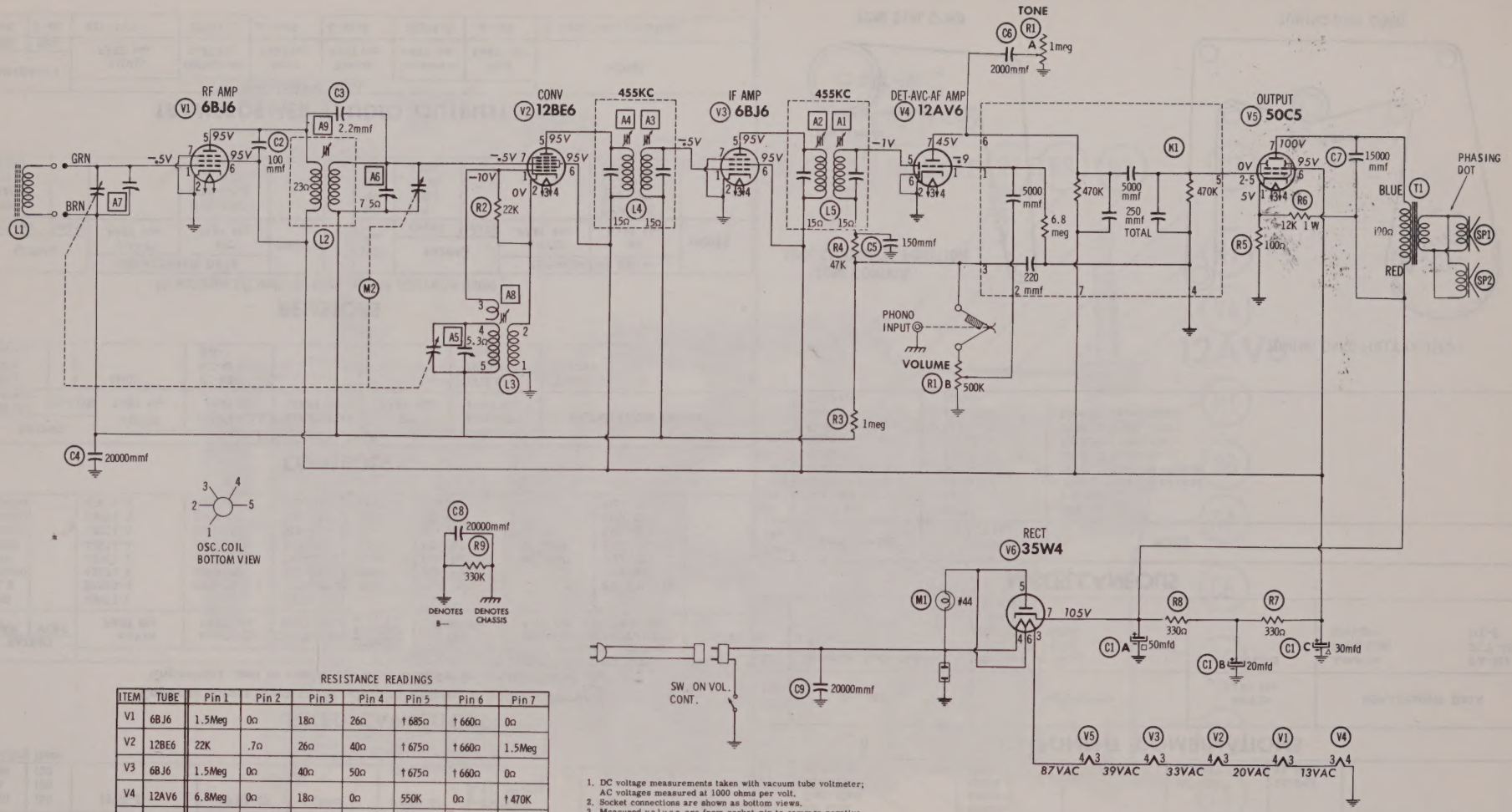



## DIAL CORD STRINGING

SET 358 FOLDER 2

ARVIN MODEL 356

ARVIN MODEL 356




RESISTANCE READINGS

| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 |
|---|---|---|---|---|---|---|---|---|
| V1 | 6BJ6 | 1.5Meg | 0Ω | 18Ω | 26Ω | †685Ω | †660Ω | 0Ω |
| V2 | 12BE6 | 22K | .7Ω | 26Ω | 40Ω | †675Ω | †660Ω | 1.5Meg |
| V3 | 6BJ6 | 1.5Meg | 0Ω | 40Ω | 50Ω | †675Ω | †660Ω | 0Ω |
| V4 | 12AV6 | 6.8Meg | 0Ω | 18Ω | 0Ω | 550K | 0Ω | †470K |
| V5 | 50C5 | 100Ω | 470K | 50Ω | 90Ω | 470K | †660Ω | †190Ω |
| V6 | 35W4 | NC | TP | 90Ω | 150Ω | 140Ω | 140Ω | 40K |

† MEASURED FROM PIN 7 OF V6.
NC NO CONNECTION.
TP TIE POINT.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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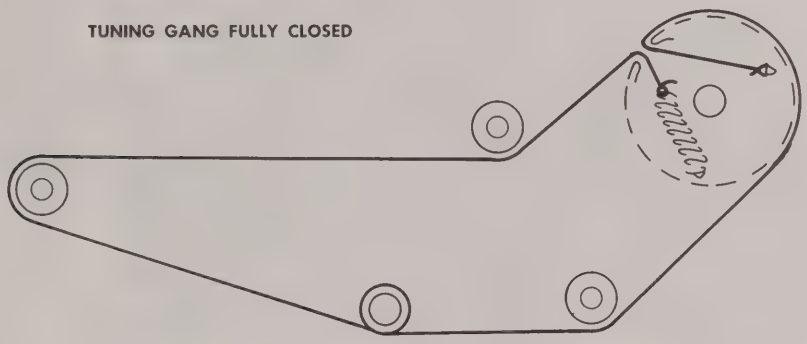
PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

COLUMBIA RECORDS
MODEL 530

| | | |
|---|---|---|
| TRADE NAME | Columbia Records Model 530 | |
| MANUFACTURER | Columbia Records, 799 Seventh Ave., New York 19, N.Y. | |
| TYPE SET | AC Operated FM-AM Receiver | |
| TUBES | Eleven | |
| POWER SUPPLY | 105-125 Volts AC-60 Cycles | RATING .7 Amp. @ 117 Volts (76 Watts) |
| TUNING RANGE-BROADCAST | 530KC-1650KC | FREQ. MOD . 88MC-108MC |

COLUMBIA RECORDS
MODEL 530

TUNING GANG FULLY CLOSED



2 TURNS

# DIAL CORD STRINGING

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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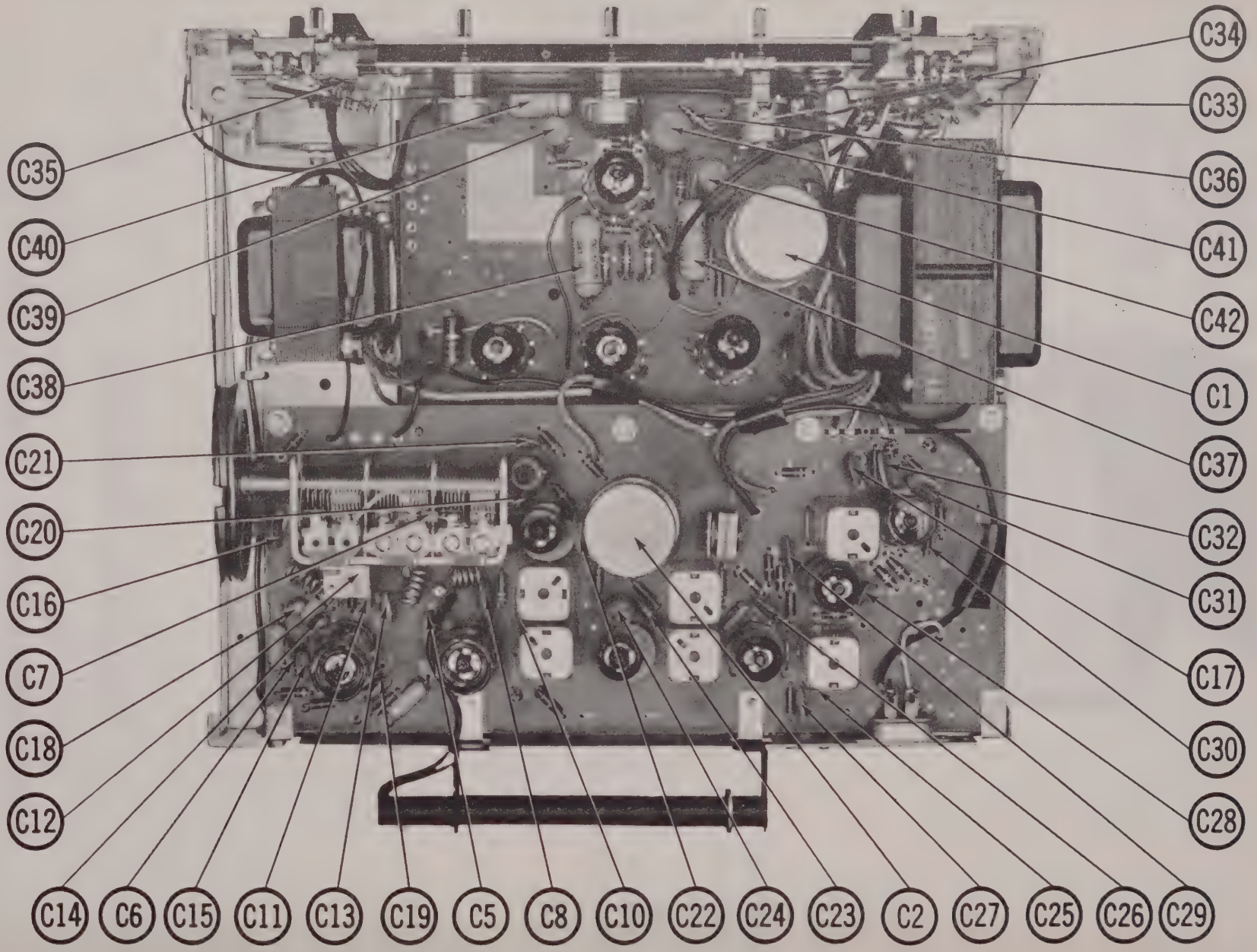
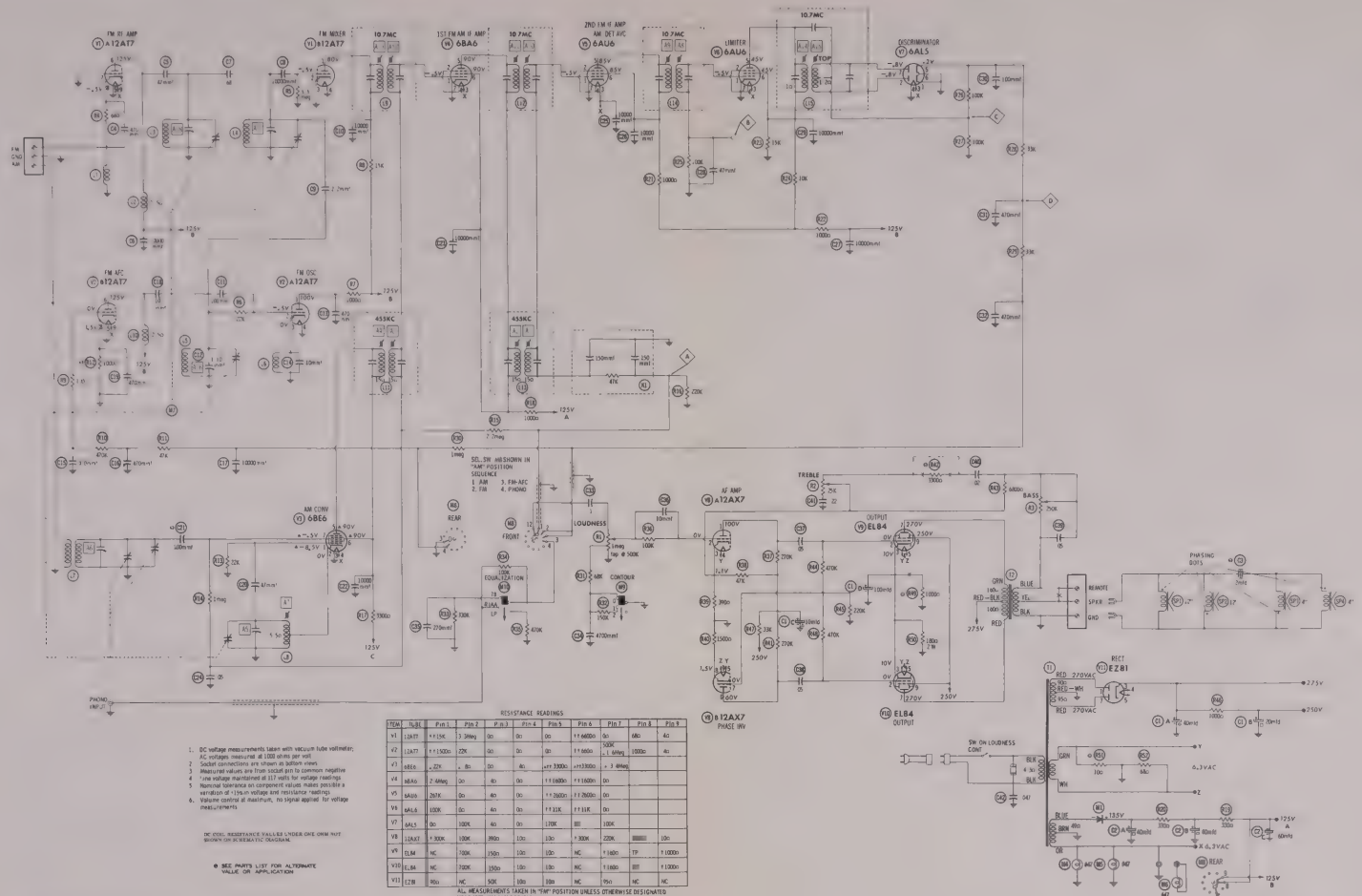



CHASSIS TOP VIEW - CAPACITOR IDENTIFICATION




| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V1 | 12AT7 | ††15K | 3.3Meg | 0Ω | 0Ω | 0Ω | ††660Ω | 0Ω | 68Ω | 4Ω |
| V2 | 12AT7 | ††1500Ω | 22K | 0Ω | 0Ω | 0Ω | ††660Ω | 500K ( 1.6Meg | 1000Ω | 4Ω |
| V3 | 6BE6 | 22K | 82Ω | 0Ω | 4Ω | +††3300Ω | +††3300Ω | + 3.4Meg | | |
| V4 | 6BA6 | 2.4Meg | 0Ω | 4Ω | 0Ω | ††680Ω | ††1600Ω | 0Ω | | |
| V5 | 6AU6 | 267K | 0Ω | 4Ω | 0Ω | ††2600Ω | ††2600Ω | 0Ω | | |
| V6 | 6AL6 | 100K | 0Ω | 4Ω | 0Ω | ††11K | ††11K | 0Ω | | |
| V7 | 6AL5 | 0Ω | 100K | 4Ω | 0Ω | 170K | ||| | 100K | |
| V8 | 12AX7 | † 300K | 100K | 390Ω | 1.5Ω | 1.5Ω | † 300K | 220K | ||| | 10Ω |
| V9 | EL84 | NC | 700K | 150Ω | 1.5Ω | 1.5Ω | NC | † 160Ω | TP | † 1000Ω |
| V10 | EL84 | NC | 700K | 150Ω | 1.5Ω | 1.5Ω | NC | † 160Ω | ||| | † 1300Ω |
| V11 | EZ81 | 95Ω | NC | 50K | 10Ω | 10Ω | NC | 95Ω | NC | NC |

RESISTANCE READINGS

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED
* MEASURED IN "AM" POSITION.
• MEASURED IN "AFC" POSITION.
† MEASURED FROM PIN 3 OF V11
†† MEASURED FROM OUTPUT OF A6

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt
2. Socket connections are shown in bottom views
3. Measured values are from socket pin to common negative
4. Line voltage maintained at 117 volts for voltage readings
5. Nominal tolerance on component values makes possible a variation of ±5% in voltage and resistance readings
6. Volume control at maximum, no signal applied for voltage measurements

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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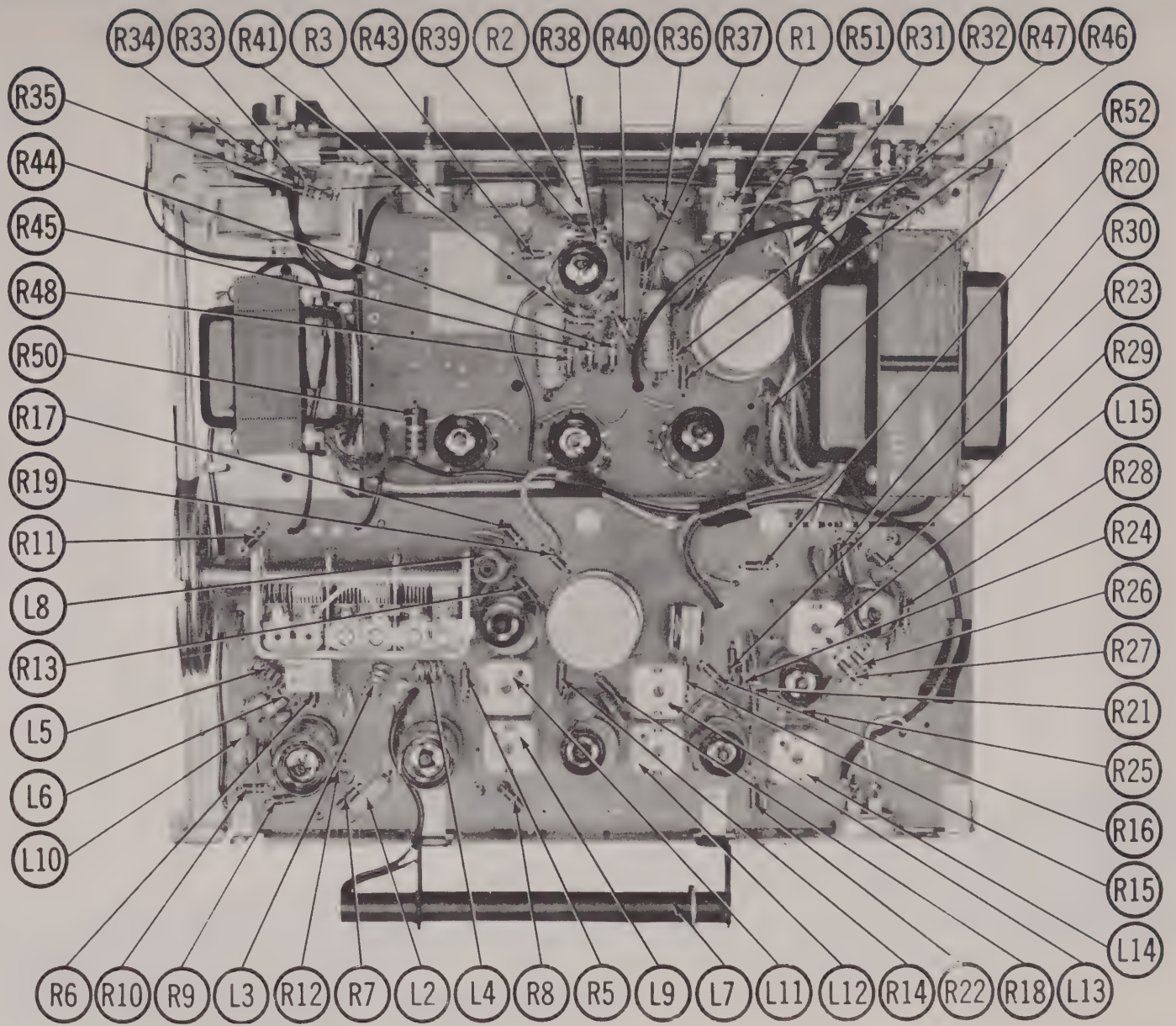
358-3




CHASSIS TOP VIEW - RESISTOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO



COLUMBIA RECORDS
MODEL 530

# ALIGNMENT INSTRUCTIONS

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Use an insulated alignment screwdriver for adjusting.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

AM ALIGNMENT

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | BAND SWITCH POS. | RADIO DIAL SETTING | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1. | .01MFD | High side to AM RF stator lug on tuning gang. Low side to chassis. | 455KC (400∿Mod) | AM | 1600KC | DC probe to point Ⓐ. Common to chassis. | A1, A2, A3, A4 | Adjust for maximum deflection. |
| 2. | Direct | High side to AM antenna terminal. Low side to chassis. | 1500KC | " | 1500KC | " | A5, A6 | " |
| 3. | " | " | 600KC | " | 600KC | " | A7 | Adjust for maximum deflection. Repeat steps 2 and 3. |

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | BAND SWITCH POS. | RADIO DIAL SETTING | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 4. | .01MFD | High side to FM RF stator lug on tuning gang. Low side to chassis. | 10.7MC (Unmod) | FM | Point of non-interference | DC probe to point Ⓑ. Common to chassis. | A8, A9, A10, A11, A12, A13 | Adjust for maximum deflection. |
| 5. | " | " | " | " | " | DC probe to point Ⓒ. Common to chassis. | A14 | " |
| 6. | " | " | " | " | " | DC probe to point Ⓓ. Common to chassis. | A15 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | BAND SWITCH POS. | RADIO DIAL SETTING | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 4. | .01MFD | High side to FM RF stator lug on tuning gang. Low side to chassis. | 10.7MC (450KC Swp) | FM | Point of non-interference | Vert. Amp. to point Ⓑ. Low side to chassis. | A8, A9, A10, A11, A12, A13 | Adjust for curve of maximum amplitude and symmetry similar to Fig. 1. |
| 5. | " | " | " | " | " | Vert. Amp. thru 100K to point Ⓒ. Low side to chassis. | A14 | " |
| 6. | " | " | " | " | " | Vert. Amp. to point Ⓓ. Low side to chassis. | A15 | Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A14 for maximum amplitude and straightness of crossover lines. |

FM RF ALIGNMENT

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | BAND SWITCH POS. | RADIO DIAL SETTING | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 7. | 270Ω Carbon Resistor | High side to FM antenna terminal. Low side to chassis. | 106MC | FM | 106MC | DC probe to point Ⓑ. Common to chassis. | A16, A17 A18 | Adjust for maximum deflection. |
| 8. | " | " | 90MC | " | 90MC | " | L3, L4, L5 | Adjust for maximum deflection by compressing or expanding coil turns. Repeat steps 7 and 8. |

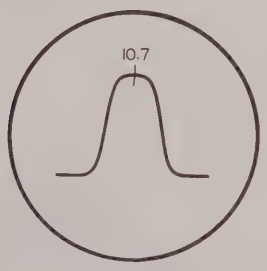


FIG. 1

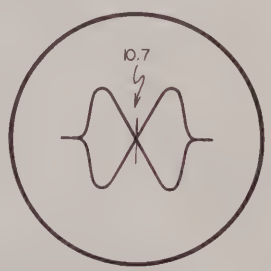


FIG. 2

# PARTS LIST AND DESCRIPTIONS

## TUBES (GENERAL ELECTRIC, SYLVANIA)

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | FM RF Amp. -Mixer | 12AT7 | |
| V2 | FM Osc. -AFC | 12AT7 | |
| V3 | AM Converter | 6BE6 | |
| V4 | 1st. IF Amplifier | 6BA6 | |
| V5 | 2nd. FM IF Amp. -AM Det. -AVC | 6AU6 | |

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V6 | Limiter | 6AU6 | |
| V7 | Discriminator | 6AL5 | |
| V8 | AF Amp. -Phase Inverter | 12AX7 | |
| V9 | Output | EL84 | |
| V10 | Output | EL84 | |
| V11 | Rectifier | EZ81 | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING CAP. | RATING VOLT. | REPLACEMENT DATA Columbia Records PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
|---|---|---|---|---|---|---|---|---|---|
| C1A | ▲40 | 350 | | | | FP343.6 | | Q-221 | R2362 * |
| B | ■20 | 350 | | | | TC3501 | | | |
| C | ♦10 | 350 | | | | | | | |
| D | 100 | 50 | | | | | | | |
| C2A | ■40 | 150 | 11C714 | | | FP311.7 | | Q-005 | TVL-3443.2 |
| B | ▲60 | 150 | | | | TC45 | | | |
| C | 60 | 150 | | | | | | | |
| C3 | 2 | 50 | 11A716 (Note 1) | NP-PRS50VN P2 | BBR4-50 † BBR4-50 | TC30 † TC30 | | MMT-0505 † MMT-0505 | R2198 * |

Note 1. Non-polarized unit.
† Connect negative leads together.
* Non-catalog item.

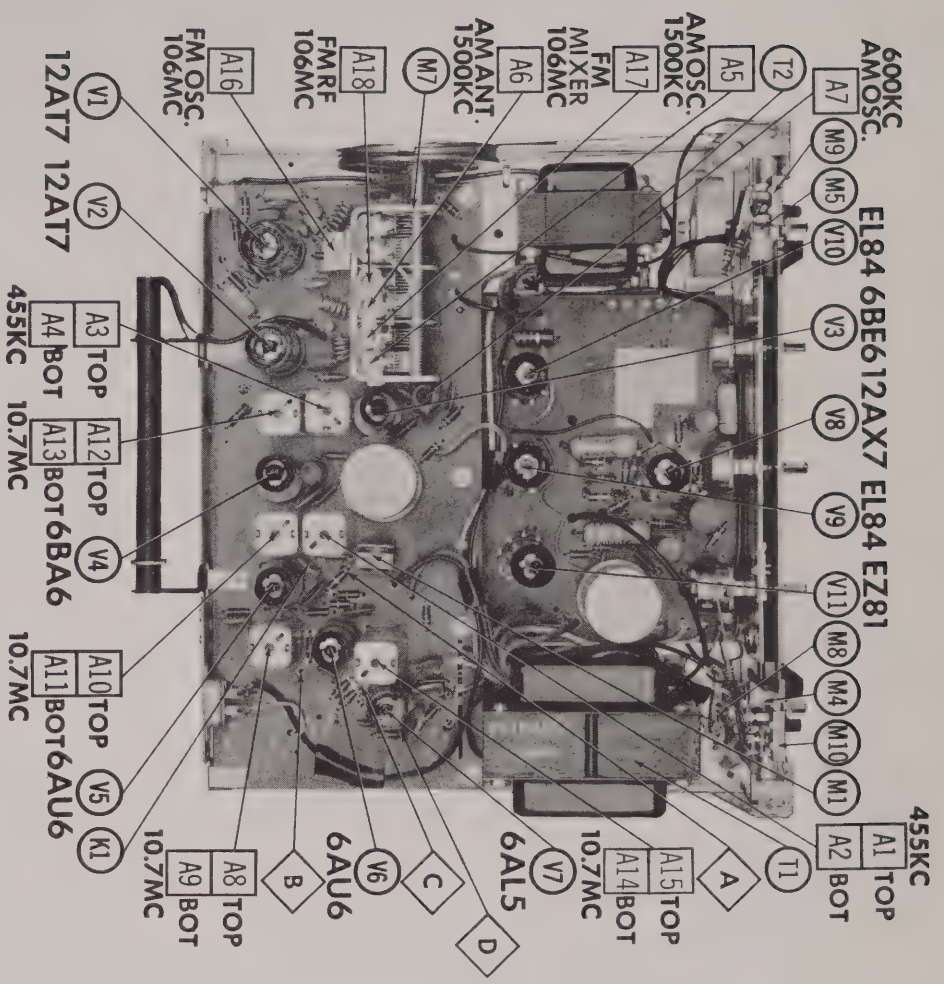
## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

| ITEM No. | RATING CAP. | RATING VOLT | REPLACEMENT DATA Columbia Records PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| C4 | 470 | | | SI470 | D6-471 | L10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C5 | 47 | | | N750-SI 47 | TCN-47 | C10Q47U | TC7-47 | NT-5447 | 5TCU-Q47 | |
| C6 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C7 | .68 | | | | TCZ-R68 | | | | | |
| C8 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C9 | 2.2 | | | NP0-SI 2.2 | TCZ-2R2 | C10V22C | TCO-2.2 | | 5TCCB-V22 | |
| C10 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C11 | 100 | | | N750-SI 100 | TCN-100 | C10T1U | TC7-100 | NT-531 | 5TCU-T1 | |
| C12 | 1-10 | | | | | | | | | |
| C13 | 470 | | | BPD-00047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C14 | 10 | | | BPD-00001 | DD-100 | L10Q1 | ED-10 | UC-541 | 5GA-Q1 | |
| C15 | 470 | | | BPD-00047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C16 | 470 | | | BPD-00047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C17 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C18 | 10 | | | BPD-00001 | DD-100 | L10Q1 | ED-10 | UC-541 | 5GA-Q1 | |
| C19 | 470 | | | BPD-00047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C20 | 47 | | | N750-SI 47 | TCN-47 | C10Q47U | TC7-47 | NT-5447 | 5TCU-Q47 | |
| C21 | 100 | | | N750-SI 100 | TCN-100 | C10T1U | TC7-100 | NT-531 | 5TCU-T1 | Note 1 |
| C22 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C23 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C24 | .05 | 200 | | BPD-05 | DF-503 | BC2S47J | | ACE615 | 2SE-S47 | |
| C25 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C26 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C27 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C28 | 47 | | | N750-SI 47 | TCN-47 | C10Q47U | TC7-47 | NT-5447 | 5TCU-Q47 | |
| C29 | 10000 | | | BPD-01 | DD-103 | BYA6S1 | ED-01 | DC511 | 5HK-S1 | |
| C30 | 100 | | | N750-SI 100 | TCN-100 | C10T1U | TC7-100 | NT-531 | 5GA-T1 | |
| C31 | 470 | | | BPD-00047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C32 | 470 | | | BPD-00047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C33 | .1 | 200 | | P288N-1 | DF-104 | CUB2P1 | | GEM-401 | 2TM-P1 | |
| C34 | 4700 | | | SI 4700 | D6-472 | BYA10D47 | ED-0047 | UC-5247 | 5GA-D47 | |
| C35 | 270 | | | SI 270 | D6-271 | LT6T27 | ED-270 | UC-5327 | 5GA-T27 | |
| C36 | 10 | | | BPD-00001 | DD-100 | L10Q1 | ED-10 | UC-541 | 5GA-Q1 | |
| C37 | .05 | 400 | | BPD-05 | DF-503 | CUB4S5 | | GEM-415 | 4TM-S5 | |
| C38 | .05 | 400 | | BPD-05 | DF-503 | CUB4S5 | | GEM-415 | 4TM-S5 | |
| C39 | .05 | 200 | | BPD-05 | DF-503 | BC2S47J | | ACE615 | 2SE-S47 | |
| C40 | .02 | 200 | | BPD-02 | DF-203 | CUB4S2 | ED-02 | GEM-412 | 2TM-S2 | |
| C41 | .22 | 200 | | | | BC2P22J | | ACE6022 | 2SE-P22 | |
| C42 | .047 | 600 | | BPD-05 | DF-503 | BC6S47J | | ACE6147 | 6SE-S47 | |

Note 1. Some versions use 1000MMF in this application.

# CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| | RESISTANCE | WATTS | Columbia Records PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | |
| R1 | 1Meg | | 9C560 | | | | | Loudness & Sw.-tap ⓐ 500K |
| R2 | 25K | | 9C558 | | | | | Treble |
| R3 | 250K | | 9C559 | | | | | Bass |

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | Columbia Records PART No. | IRC PART No. | |
| R4 | 68Ω | | | BTS-68 | |
| R5 | 3.3Meg | | | BTS-3.3Meg | |
| R6 | 22K | | | BTS-22K | |
| R7 | 1000Ω | | | BTS-1000 | |
| R8 | 15K | | | BTS-15K | |
| R9 | 100Ω | | | BTS-100 | |
| R10 | 470K | | | BTS-470K | |
| R11 | 47K | | | BTS-47K | |
| R12 | 1000Ω | | | BTS-1000 | Note 3 |
| R13 | 22K | | | BTS-22K | |
| R14 | 1Meg | | | BTS-1Meg | |
| R15 | 2.2Meg | | | BTS-2.2Meg | |
| R16 | 220K | | | BTS-220K | |
| R17 | 3300Ω | | | BTS-3300 | |
| R18 | 1000Ω | | | BTS-1000 | |
| R19 | 330Ω | | | BTS-330 | |
| R20 | 330Ω | | | BTS-330 | |
| R21 | 1000Ω | | | BTS-1000 | |
| R22 | 1000Ω | | | BTS-1000 | |
| R23 | 15K | | | BTS-15K | |
| R24 | 10K | | | BTS-10K | |
| R25 | 100K | | | BTS-100K | |
| R26 | 100K | | | BTS-100K | |
| R27 | 100K | | | BTS-100K | |

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | Columbia Records PART No. | IRC PART No. | |
| R28 | 33K | | | BTS-33K | |
| R29 | 33K | | | BTS-33K | |
| R30 | 1Meg | | | BTS-1Meg | |
| R31 | 68K | | | BTS-68K | |
| R32 | 150K | | | BTS-150K | |
| R33 | 330K | | | BTS-330K | |
| R34 | 100K | | | BTS-100K | |
| R35 | 470K | | | BTS-470K | |
| R36 | 100K | | | BTS-100K | |
| R37 | 270K | | | BTS-270K | |
| R38 | 47K | | | BTS-47K | |
| R39 | 390Ω | | | BTS-390 | |
| R40 | 1500Ω | | | BTS-1500 | |
| R41 | 270K | | | BTS-270K | |
| R42 | 3300Ω | | | BTS-3300 | Note 1 |
| R43 | 6800Ω | | | BTS-6800 | |
| R44 | 470K | | | BTS-470K | |
| R45 | 220K | | | BTS-220K | |
| R46 | 1000Ω | | | BTS-1000 | |
| R47 | 33K | | | BTS-33K | |
| R48 | 470K | | | BTS-470K | |
| R49 | 1000Ω | | | BTS-1000 | Note 1 |
| R50 | 180Ω 5% | 2 | | BTB-180 | |
| R51 | 10Ω | | | BTS-10 | Note 2 |
| R52 | 68Ω | | | BTS-68 | |

Note 1. Not used in some versions.
Note 2. 68Ω used in some versions.
Note 3. Some versions may use 560Ω.

## TRANSFORMER (POWER)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. 1 | SEC. 2 | SEC. 3 | Columbia Records PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
| T1 | 117VAC ⓐ .7A | 125VAC ⓐ .042A tap ⓐ 6.3V ⓐ 2.1A | 520VCT ⓐ .067A | 6.3VAC ⓐ 2.7A | 2C104 | | | | | |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | Columbia Records PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T2 | 7200Ω CT | 3-4Ω tap ⓐ 1.6Ω | 3C214 | | | | | | |

## SPEAKER

| ITEM No. | TYPE | | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|
| | SIZE | FIELD | V. C. IMP. | Columbia Records PART No. | QUAM PART No. | |
| SP1 | 4" | PM | 3-4Ω | 1A116 ① | | ① Connect in parallel and phase |
| SP2 | 4" | PM | 3-4Ω | 1A116 ① | | |
| SP3 | 12" | PM | 3-4Ω | 1A114 ① | 12A6A ① | |
| SP4 | 12" | PM | 3-4Ω | 1A115 ① | 12A6A ① | |

# PARTS LIST AND DESCRIPTIONS (Continued)

## COILS (RF-IF)

| ITEM No. | USE | REPLACEMENT DATA | | | | NOTES |
|---|---|---|---|---|---|---|
| | | Columbia Records PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | |
| L1 | FM Ant. Coil | | | | | .24 Microhenry, IRC part #CLA |
| L2 | RF Choke | 21C203 | | | | 3.3 Microhenries, IRC part #CLA |
| L3 | FM RF Coil | | | | | |
| L4 | FM Mixer Coil | | | | | |
| L5 | FM Osc. Coil | | | | | |
| L6 | Cathode Choke | 21C201 | 19-1000 | | 4602 | 1 Microhenry, IRC part #CLA |
| L7 | Loop Stick | 19C549 | | | | |
| L8 | AM Osc. Coil | 20C301 | | | | |
| L9 | 1st. FM IF | | 16-3490 | | | |
| L10 | RF Choke | 21C203 | | | | 3.3 Microhenries, IRC part #CLA |
| L11 | 1st. AM IF | 20C304 | 16-6780 | BC-356 | 13-PC1 | |
| L12 | 2nd. FM IF | | 16-3490 | | | |
| L13 | 2nd. AM IF | 20C304 | 16-6780 | BC-357 | 13-PC2 | |
| L14 | FM Limiter | | 16-3490 | | | |
| L15 | FM Discriminator | 20C303 | 17-3491 | | | |

## COMPONENT COMBINATIONS

| ITEM No. | USE | DESCRIPTION | Columbia Records PART No. | REPLACEMENT DATA | |
|---|---|---|---|---|---|
| K1 | AM Det. RF Filter | 150MMF, 150MMF, 47K | | Aerovox | PA-98 |
| | | | | Centralab | PC-51 |
| | | | | Cornell-Dubilier | 111TM2 |
| | | | | Erie | 1403-02 |
| | | | | Sprague | D-2 |

## SELENIUM RECTIFIER

| ITEM No. | RATING | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|
| | CURRENT | Columbia Records PART No. | FEDERAL PART No. | INTERNATIONAL PART No. | MALLORY PART No. | RADIO RECEPTOR PART No. | SARKES TARZIAN PART No. | |
| M1 | .042A | 10C608 | | RS065Q | | 8J1B | 50 | |

## PHONO CARTRIDGE

| ITEM No. | REPLACEMENT DATA | | | | | REMARKS |
|---|---|---|---|---|---|---|
| | Columbia Records PART No. | ASTATIC PART No. | | ELECTRO-VOICE PART No. | | |
| | | CARTRIDGE | NEEDLE | CARTRIDGE | MOUNT | |
| M2 | | | | 56 | PT-1 | |

## PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

| ITEM No. | REPLACEMENT DATA | | | REMARKS |
|---|---|---|---|---|
| | Columbia Records PART No. | JENSEN PART No. | WALCO PART No. | |
| M3 | | †CRA55 †CRA55LP or ♦CRA55D ♦CRA55LPD | †W-64S or †W-64MGS | † Jewel ♦ Diamond |

## MISCELLANEOUS

| ITEM No. | PART NAME | Columbia Records PART No. | NOTES |
|---|---|---|---|
| M4 | Dial Light | 19A503 | #47 |
| M5 | Dial Light | 19A503 | #47 |
| M6 | Bezel Light | 19A503 | #47 |
| M7 | Tuning Cap. | 14C101 | 6 Gang |
| M8 | Switch | 19C550 | Function Selector (wafer type, 4 position) |
| M9 | Switch | 19C548 | Contour (Slide Type) |
| M10 | Switch | 19C548 | Equalization (Slide Type) |
| | Dial Glass | 19C552 | |
| | Pointer | 19C553 | |
| | Knob | 8A460 | Unmarked, 5 used |
| | Cabinet | 17B947 | Mahogany |
| | Cabinet | 17B948 | Limed oak |

RETMA MEMBER

DUMONT
Ch. RA-372, RA-373

L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

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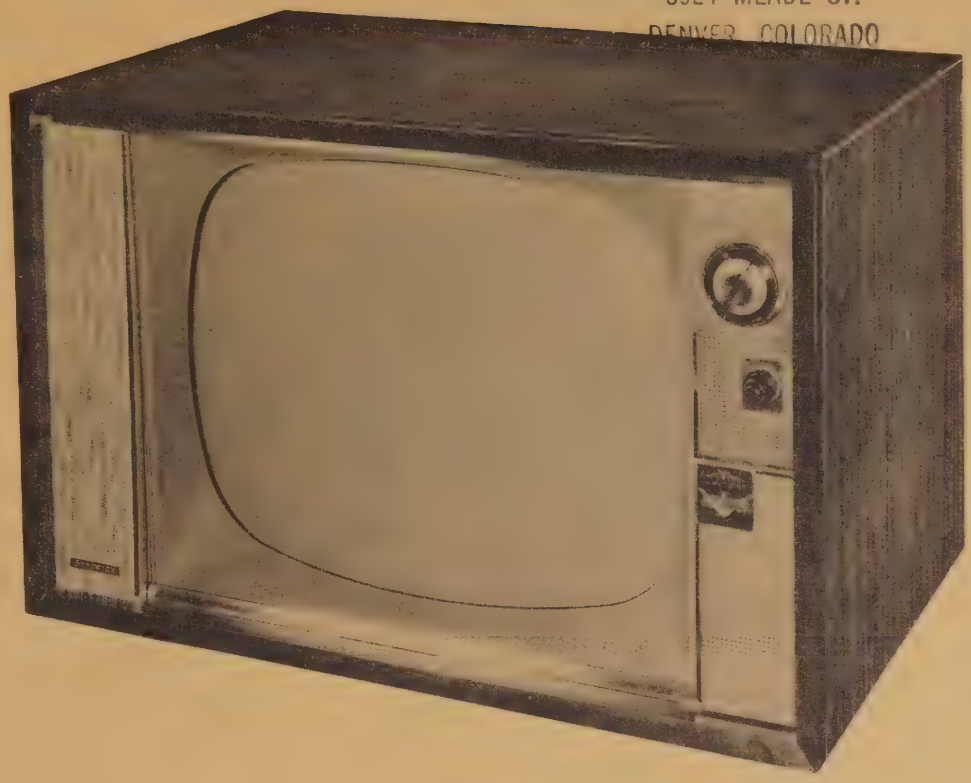

DUMONT
Ch. RA-372, RA-373

DUMONT CHASSIS RA-372

| | |
|---|---|
| TRADE NAME | Dumont Chassis RA-372, RA-373 |
| MANUFACTURER | Allen B. Dumont Laboratories, Inc., 257 Sixteenth Ave., Paterson, N.J. |
| TYPE SET | Television Receiver |
| TUBES | Twenty-three |
| POWER SUPPLY | 110-120 Volts AC, 60 Cycle RATING 235 Watts 2.1 Amp. @ 117 Volts AC |
| TUNING RANGE | Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier) |

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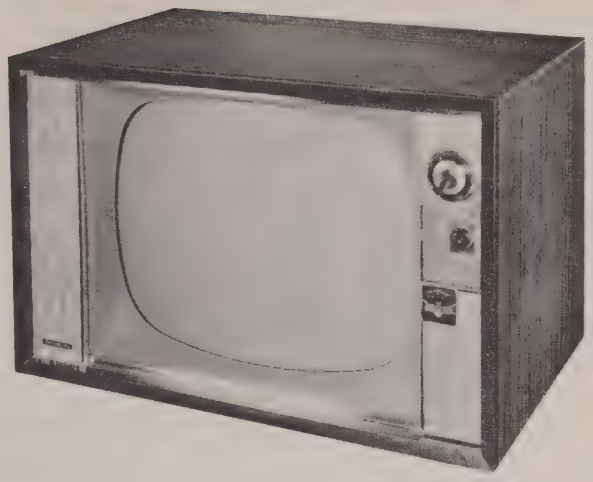
# DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 4 push-on type control knobs from the front.
2. Remove 4 wood screws and the rear cover.
3. Remove 2 wood screws holding the antenna terminal board.
4. Remove picture tube socket, yoke plug, HV lead, speaker lead and ground strap between picture tube strap and chassis.
5. Remove 6 wood screws at rear of chassis holding it to the side of the cabinet.
6. Remove the chassis.
7. Remove 4 hex nuts and the speaker.



CHASSIS

RA-372, RA-373

DUMONT
Ch. RA-372, RA-373

# SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 6 wood screws holding the metal trim at the top of cabinet. Use extreme caution when removing the safety glass.

FOCUS

Adjust the Ion trap for the best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator it is necessary to remove the rear cover and supply power to the set. Set the horizontal hold control and the horizontal frequency set control at the center of their ranges. Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (A14) located on top of chassis.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

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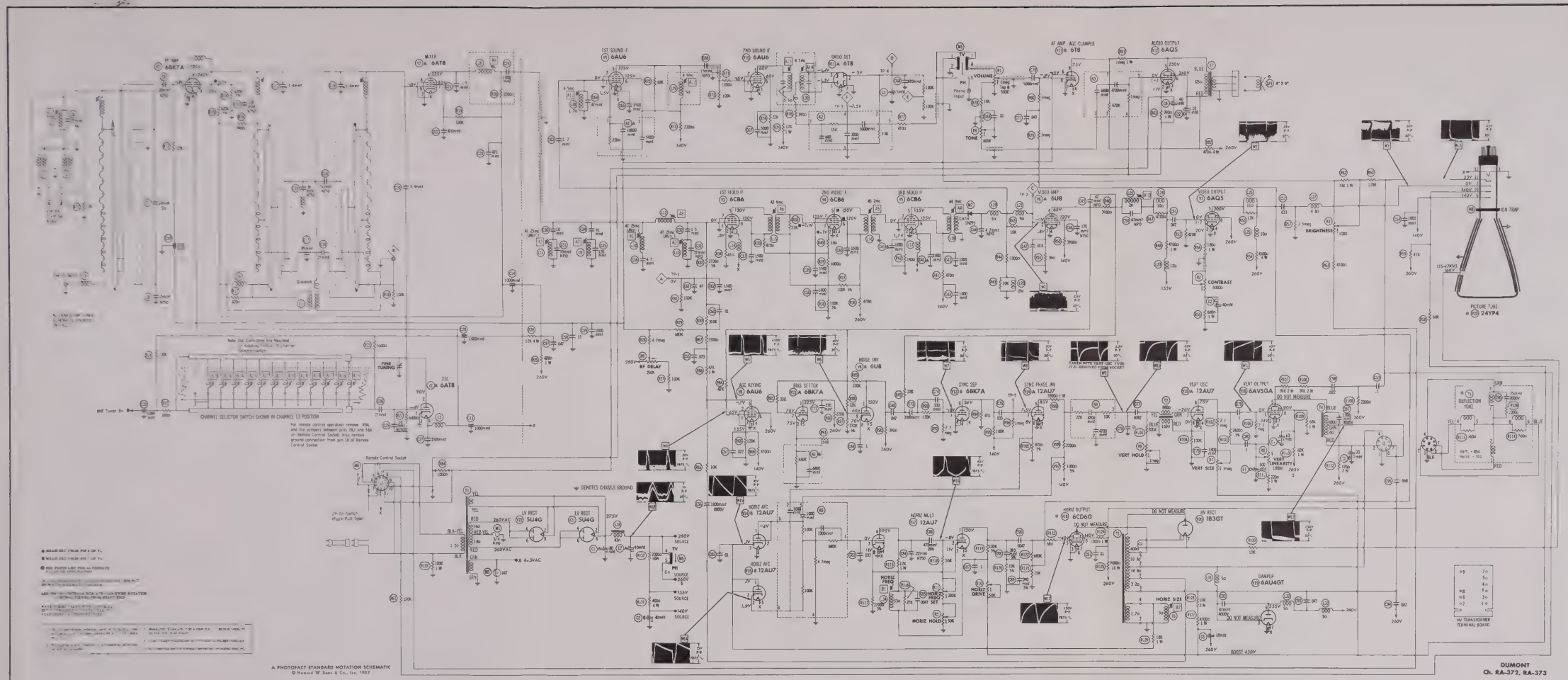
RF AMP
6BK7A
MIXER
6AT8
OSC
6AT8
1ST SOUND IF
6AU6
2ND SOUND IF
6AU6
RATIO DET
6T8
AF AMP AGC CLAMPER
6T8
AUDIO OUTPUT
6AQ5
1ST VIDEO IF
6CB6
2ND VIDEO IF
6CB6
3RD VIDEO IF
6CB6
VIDEO AMP
6U8
VIDEO OUTPUT
6AQ5
NOISE INV
6U8
AGC KEYING
6AU6
BIAS SETTER
6BK7A
SYNC SEP
6BK7A
SYNC PHASE INV
12AU7
VERT OSC
12AU7
VERT OUTPUT
6AV5GA
HORIZ AFC
12AU7
HORIZ AFC
12AU7
HORIZ MULT
12AU7
HORIZ OUTPUT
6CD6G
HV RECT
1B3GT
DAMPER
6AU4GT
LV RECT
5U4G
LV RECT
5U4G
PICTURE TUBE
24YP4
ION TRAP
VOLUME
TONE
BRIGHTNESS
CONTRAST
FINE TUNING
RF DELAY
VERT HOLD
VERT SIZE
VERT LINEARITY
HORIZ FREQ
HORIZ HOLD
HORIZ SIZE
HORIZ DRIVE
DEFLECTION YOKE
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
DENOTES CHASSIS GROUND
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# TUBE PLACEMENT CHART

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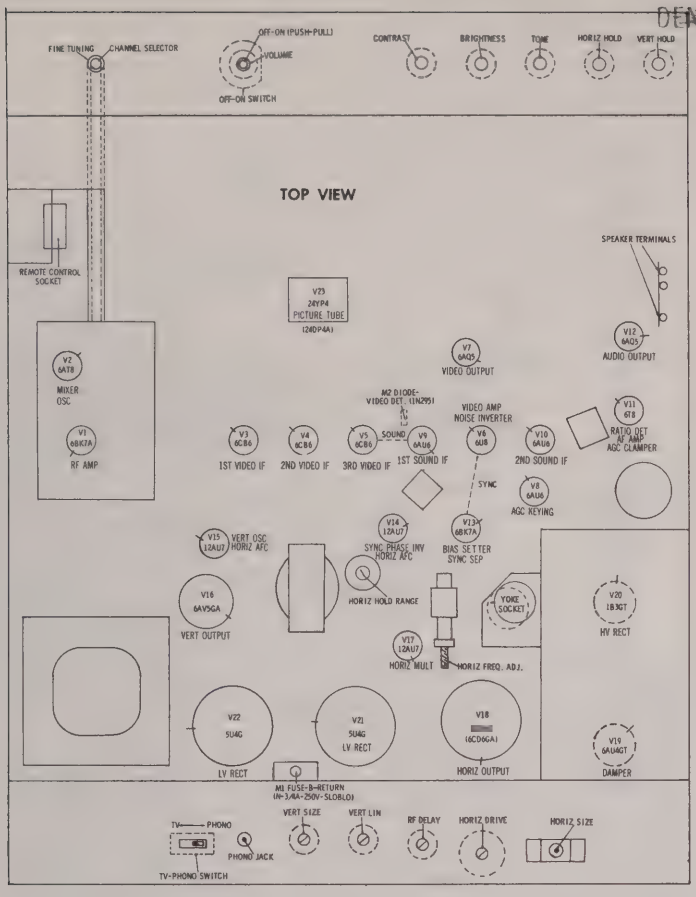



# TUBE FAILURE CHECK CHART

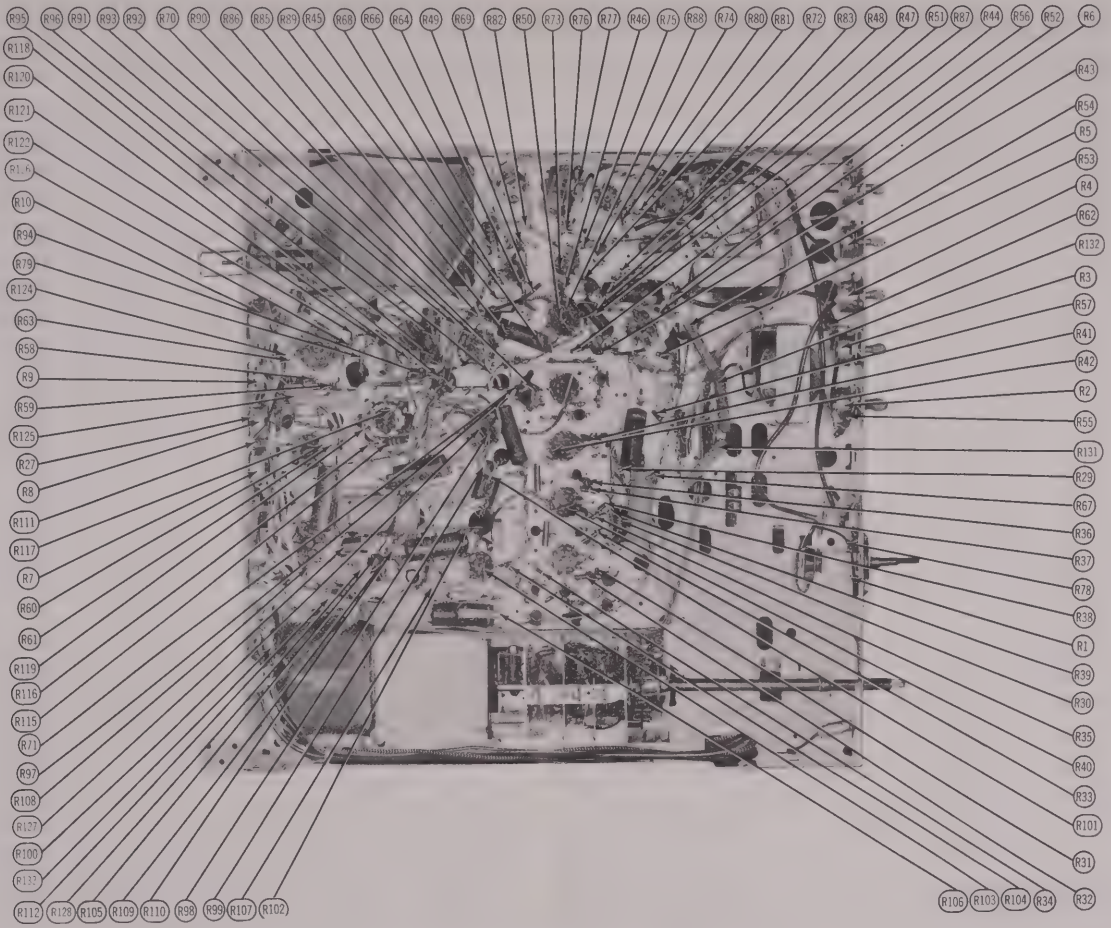
The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

**POWER SUPPLY FAILURE**
No raster, no sound - Fuse (M1), V21, V22

**LOSS OF PICTURE OR SOUND**
No pic, no sound, has raster - V3, V4, V5, Diode (M2), V8
No pic, no sound, has snow - V1, V2, V3, V11
No pic, has sound, has raster - V6, V7, V23
Has pic, no sound - V9, V10, V11, V12
Overloaded picture - V8

**SYNC FAILURE**
No vert. sync - V6, V13, V14
No horiz. sync - V6, V13, V14, V15
No vert. or horiz. sync - V6, V13, V14

**SWEEP FAILURE**
No raster, has sound - V14, V15, V17, V18, V19, V20, V23
No vertical deflection - V15, V16
Poor vert. linearity or foldover - V15, V16
Poor horiz. linearity or foldover - V17, V18, V19
Narrow picture - V17, V18, V19, V21, V22
Vert. off freq. - V15
Horiz. off freq. - V14, V15, V17




CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

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CHASSIS BOTTOM VIEW - TRANS. & INDUCTOR IDENTIFICATION

# ALIGNMENT INSTRUCTIONS

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

Remove the horizontal output tube (V18) and the damper tube (V19) to disable the high voltage. Connect the speaker, yoke and picture tube during alignment.

**VIDEO IF ALIGNMENT**

Connect a 2200Ω, 2 watt resistor to the red wire from the tuner and the other end of the resistor to chassis.
Connect the negative lead of a variable bias supply to point Ⓐ. Connect the positive lead to chassis. Adjust the bias for -4.5 volts for steps 1 thru 5. Reduce the bias to -2 volts for step 6.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1. | Fig. 1 | High side to point Ⓑ. thru network (Fig. 1). Low side to chassis. | Not used | 47.25MC (Unmod) | Any non-interfering channel | USE VTVM. DC probe to point Ⓒ. Low side to chassis. | A1, A2 | Adjust for MINIMUM deflection. |
| 2. | " | " | " | 41.25MC | " | " | A3 | " |
| 3. | " | " | " | 44.0MC | " | " | A4 | Adjust for maximum negative deflection. |
| 4. | " | " | " | 45.2MC | " | " | A5 | " |
| 5. | " | " | " | 42.9MC | " | " | A6 | " |
| 6. | " | " | 43.5MC (10MC Swp) | 40.2MC 41.25MC 42.25MC 44.0MC | " | Vert. Amp. thru a detector probe to pin 5 (plate) of V3 (6CB6). Low side to chassis. | A7, A8, A9 | Adjust A7 for maximum 40.2MC kickback peak as in Fig. 2. Simultaneously adjust A8 and A9 for response as shown in Fig. 2 with markers positioned as shown. Recheck adjustment of A7 for 40.2MC kickback. Remove 2200Ω resistor and bias supply. |

**4.5MC TRAP ALIGNMENT**

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 7. | Direct | High side to point Ⓒ Low side to chassis. | Not used | 4.5MC (400∿ AM Mod) | Any non-interfering channel | Vert. Amp. thru a detector probe to pin 7 (grid) of V7 (6AQ5). Low side to chassis. | A10 | Adjust for MINIMUM 400∿ indication on scope. |

**SOUND IF ALIGNMENT**

Connect two matched 100K (±1%) resistors in series from point Ⓓ to chassis. The junction of these two resistors is alignment point Ⓔ, as shown on the schematic. If a crystal accuracy 4.5MC generator is not available, the station signal may be used.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 8. | Direct | High side to point Ⓒ. Low side to chassis. | 4.5MC (Unmod) | Any non-interfering channel | DC probe to point Ⓔ Common to chassis. | A11, A12, A13 | Adjust for maximum deflection. |
| 9. | " | " | " | " | DC probe to point Ⓕ. Common to point Ⓔ. | A14 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. Remove the 100K resistors. |

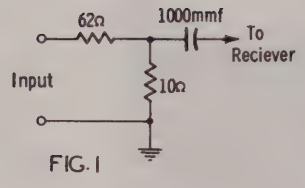


FIG. 1

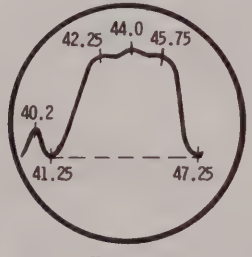


FIG. 2

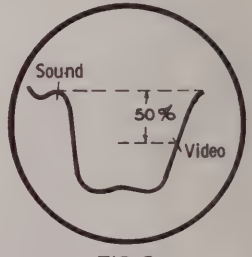


FIG. 3

# ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT

Connect bias as under "Video IF Alignment" and adjust for best response without overload indications in the response curve.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep genera tor output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.
Set the fine tuning control to the center of its range.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 10. | Two 120Ω Carbon Resistors | Across antenna terminals with 120Ω in each lead. | 213MC (10MC Swp) | 211.25MC 215.75MC | 13 | Vert. Amp. thru 47K to point ⓒ. Low side to chassis. | A15 | Adjust to place sound marker in trap notch as in Fig. 3. Video marker should fall at 50%. |
| | | | 207MC (10MC Swp) | 205.25MC 209.75MC | 12 | | A16 | |
| | | | 201MC (10MC Swp) | 199.25MC 203.75MC | 11 | | A17 | |
| | | | 195MC (10MC Swp) | 193.25MC 197.75MC | 10 | | A18 | |
| | | | 189MC (10MC Swp) | 187.25MC 191.75MC | 9 | | A19 | |
| | | | 183MC (10MC Swp) | 181.25MC 185.75MC | 8 | | A20 | |
| | | | 177MC (10MC Swp) | 175.25MC 179.75MC | 7 | | A21 | |
| | | | 85MC (10MC Swp) | 83.25MC 87.75MC | 6 | | A22 | |
| | | | 79MC (10MC Swp) | 77.25MC 81.75MC | 5 | | A23 | |
| | | | 69MC (10MC Swp) | 67.25MC 71.75MC | 4 | | A24 | |
| | | | 63MC (10MC Swp) | 61.25MC 65.75MC | 3 | | A25 | |
| | | | 57MC (10MC Swp) | 55.25MC 59.75MC | 2 | | A26 | |

RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

4.5MC TRAP ADJUSTMENTS

The IF rejection trap is factory adjusted to 44.85MC. If interference occurs within the IF range, adjust A27 for MINIMUM interference in the picture.

# HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

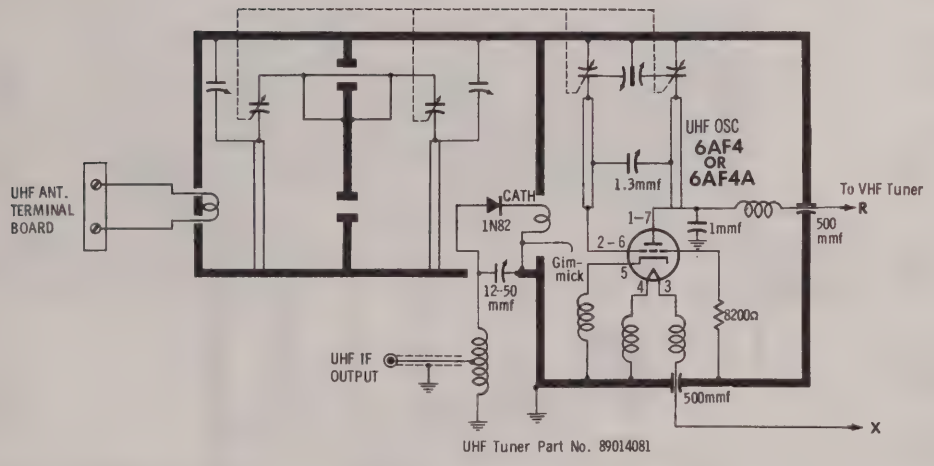
Set the horizontal hold control at the center of its range. Set the horizontal frequency set control (R11) to the center of its range

Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Adjust the horizontal drive control (R10) for maximum width without a vertical white drive line or horizontal compression near the center of the screen.

Adjust the horizontal size slug (B2) for a picture slightly wider than necessary to fill the picture mask.






UHF Tuner Part No. 89014081

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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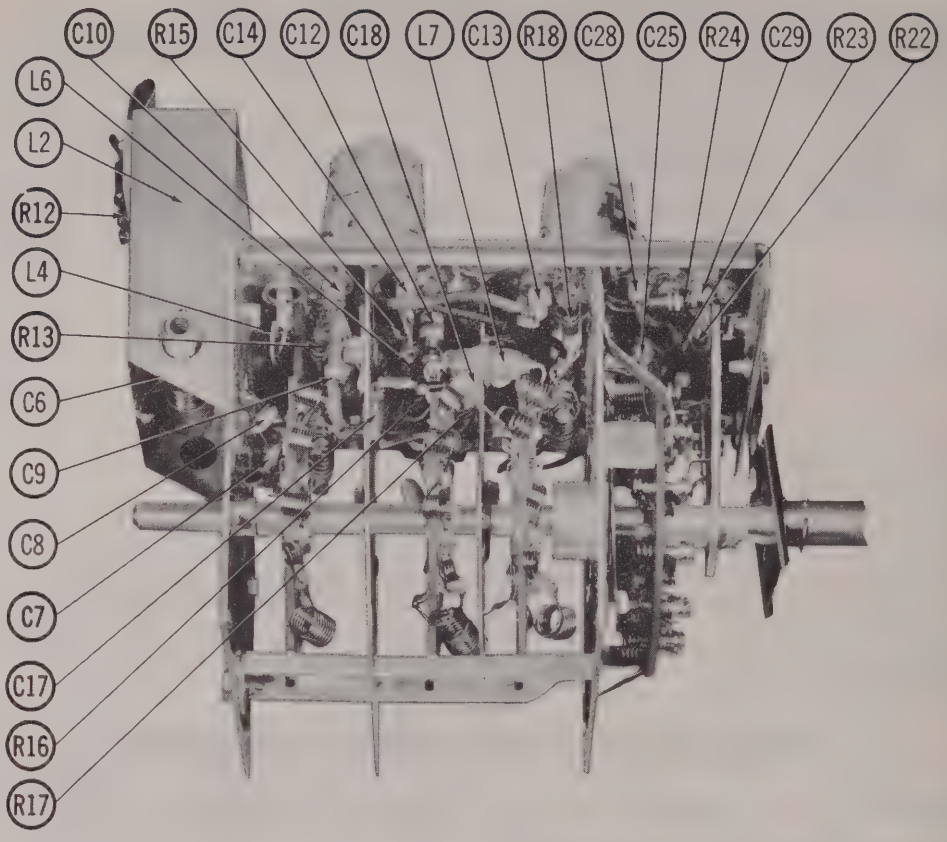
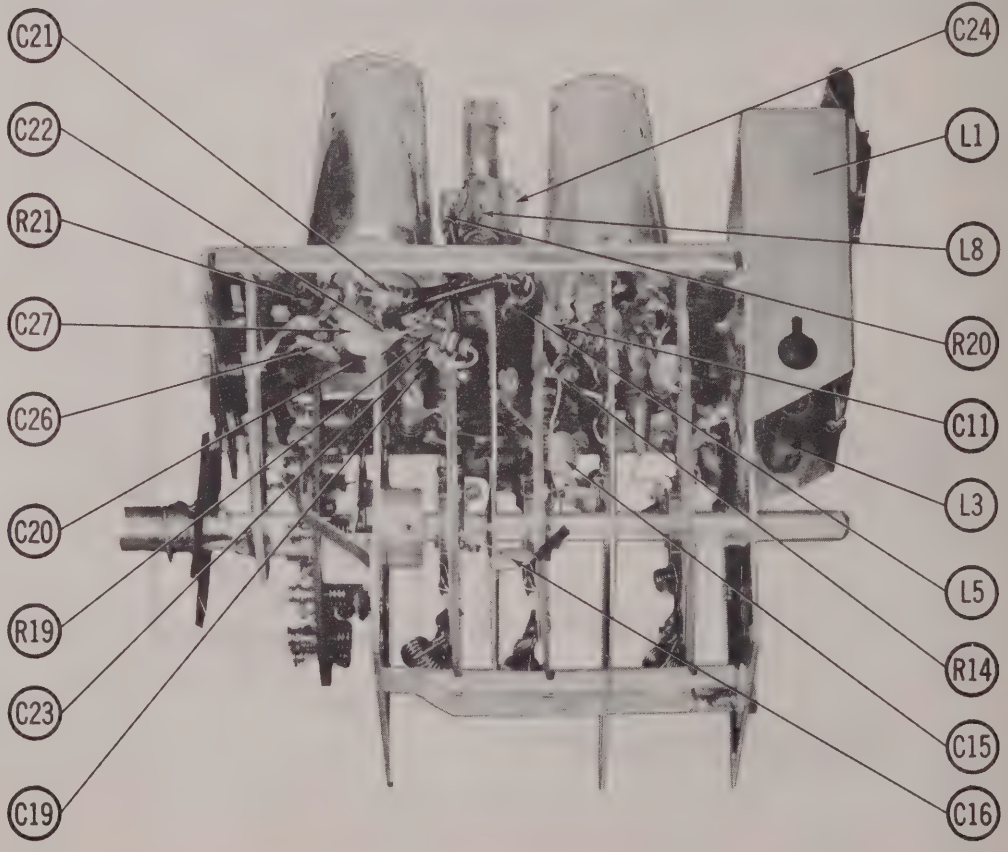
# ALTERNATE UHF TUNER SCHEMATIC




**RF TUNER-LEFT SIDE**




**RF TUNER-RIGHT SIDE**

# RESISTANCE MEASUREMENTS

| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V1 | 6BK7A | INF | 900K | 0Ω | 0Ω | .1Ω | †510Ω | 350K | INF | 0Ω |
| V2 | 6AT8 | 6800Ω | †17K | 0Ω | 0Ω | .1Ω | †2700Ω | †100K | 0Ω | 100K |
| V3 | 6CB6 | 100K | 47Ω | .1Ω | 0Ω | ■470Ω | ■470Ω | 0Ω | | |
| V4 | 6CB6 | ■6800Ω | ■ 18Ω | .1Ω | 0Ω | †510Ω | †510Ω | 57K | | |
| V5 | 6CB6 | .1Ω | 180Ω | .1Ω | 0Ω | †2900Ω | †2900Ω | 0Ω | | |
| V6 | 6U8 | †180K | 3300Ω | †6300Ω | 0Ω | .1Ω | †11K | 39Ω | 800K | †30K |
| V7 | 6AQ5 | 470K | ●1300Ω | 0Ω | .1Ω | †4500Ω | †43Ω | 470K | | |
| V8 | 6AU6 | †60K | †7000Ω | 0Ω | .1Ω | ●460K | †43Ω | †7000Ω | | |
| V9 | 6AU6 | 1.7Ω | 0Ω | 0Ω | .1Ω | †4500Ω | †4500Ω | 220Ω | | |
| V10 | 6AU6 | 100K | 0Ω | 0Ω | .1Ω | †14K | †14K | 0Ω | | |
| V11 | 6T8 | INF | 33K | INF | .1Ω | 0Ω | 900K | 0Ω | 2Meg | †450K |
| V12 | 6AQ5 | 370K | 250Ω | .1Ω | 0Ω | †850Ω | †500Ω | 370K | | |
| V13 | 6BK7A | †220K | †50K | 680K | 0Ω | .1Ω | †35K | 2.7Meg | 0Ω | INF |
| V14 | 12AU7 | 4.8Meg | 4.8Meg | 18K | 0Ω | 0Ω | †9000Ω | †1Meg | 820Ω | .1Ω |
| V15 | 12AU7 | 18K | 18K | 4.8Meg | .1Ω | .1Ω | ●‡2.8Meg | ●900K | 150Ω | 0Ω |
| V16 | 6AV5GA | 2.2Meg | 0Ω | ●550Ω | NC | †1070Ω | NC | .1Ω | †35K | |
| V17 | 12AU7 | ●‡150K | ●130K | 2700Ω | .1Ω | .1Ω | ‡65K | 5.3Meg | 2700Ω | 0Ω |
| V18 | 6CD6G | TP | .1Ω | 0Ω | TP | 700K | NC | 0Ω | †10K | TOP CAP ‡15Ω |
| V19 | 6AU4GT | NC | NC | ¶ | NC | †50Ω | NC | .1Ω | 0Ω | |
| V20 | 1B3GT | | PINS | 1 THRU 8 | HAVE | INFINITE | RESISTANCE | | | TOP CAP ‡410Ω |
| V21 | 5U4G | NC | ¶ | NC | 14Ω | NC | 14Ω | NC | ¶ | |
| V22 | 5U4G | NC | ¶ | NC | 14Ω | NC | 14Ω | NC | ¶ | |
| V23 | 24YP4 | 0Ω | 1.5Meg | Pin 6 †2400Ω | Pin 10 ‡68K | Pin 11 ●130K | Pin 12 .1Ω | | | |

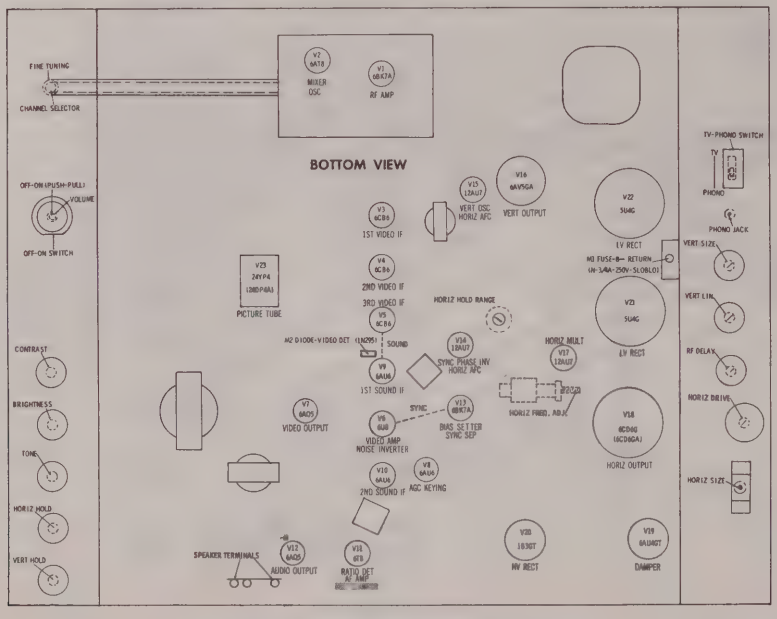
¶ THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.

† MEASURED FROM PIN 8 OF V22. NC NO CONNECTION

‡ MEASURED FROM PIN 3 OF V19. TP TIE POINT

● THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION.

■ MEASURED FROM PIN 7 OF V4.




# TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO




CHASSIS TOP VIEW

Ch. RA-372, RA-373

DUMONT

# TUBES ( GENERAL ELECTRIC, SYLVANIA)

| ITEM No | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | RF Amplifier | 6BK7A | |
| V2 | Mixer Oscillator | 6A7S | |
| V3 | 1st Video IF Amp | 6CB6 | |
| V4 | 2nd Video IF Amp | 6CB6 | |
| V5 | 3rd Video IF Amp | 6CB6 | |
| V6 | Video Amp Noise Inv | 6U8 | |
| V7 | Video Output | 6AU6GT | |
| V8 | AGC Keying | 6AL6 | |
| V9 | 1st Sound IF Amp | 6AU6 | |
| V10 | 2nd Sound IF Amp | 6AU6 | |
| V11 | Ratio Det - AF Amp - AGC Clamper | 6T8 | |
| V12 | Audio Output | 6AQ5 | |
| V13 | Rise Setter-Sync Sep | 6BK7A | |
| V14 | Sync Phase Inv - Horiz AFC | 12AU7 | |
| V15 | Vert - Horiz AFC | 12AU7 | |
| V16 | Horiz. Mult. | 6AU7 | |
| V17 | Horiz. Output | 6LD6G | Note 1 |
| V19 | Damper | 6AU6GT | |
| V20 | HV Rectifier | 1B3GT | |
| V21 | LV Rectifier | 5U4G | |
| V22 | LV Rectifier | 5U4G | |

Note 1. Some versions may use 6CD6GA.

# PICTURE TUBE

| ITEM No. | REPLACEMENT DATA: DUMONT PART No. | SYLVANIA PART No. | GENERAL ELECTRIC PART No. | NOTES |
|---|---|---|---|---|
| V23 | 24YP4 | 24YP4 | 24YP4 | ① Silver screen "86" |
| | 24DP4A | 24DP4A | 24DP4A | ② Aluminized |
| | | | 24DP4 | |

# ELECTROLYTIC CAPACITORS

| ITEM No. | RATING: CAP. | VOLT | DUMONT PART No. | AEROVOX PART No. | CORNELL DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 480 | 400 | 20151429 | AFH4-57-85 | CGG488 | FP431.7 | CTMQ-123 | Q-030 | TVL-4671 |
| B | 420 | 400 | | | HR1005 | TTC75 | TD-100-50 | MT-06100 | |
| C | 440 | 500 | | | | | | | |
| D | 100 | 50 | | | | | | | |
| C2A | 480 | 400 | 20230458 | AFH4-57-55 | CGB494 | FP389.1 | | Q-251 | TVL-4670.3 |
| B | 420 | 400 | | | HR4048 | TCD-78 | | MT-4510 | |
| C | 100 | 25 | | | | | | | |
| D | 440 | 400 | | | | | | | |
| C3 | 5 | 100 | 03193852 | BBR4-150 | TC40 | TD-4-150 | PM-1504 | TVA-1403 | |
| C4 | 10 | 25 | 03193856 | BBR50-25 | TC39 | TD-10-25 | PM-1005 | TVA-1404 | |
| C5 | 10 | 350 | 03250422 | BBR350V10 | TC63 | TD-10-450 | PM-1010 | FM-4510 | TVA-1604 |

# FIXED CAPACITORS

**Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING: CAP | VOLT | DUMONT PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C6 | 27 | | 03163500 | MPO-S25 | TCZ-27 | CI0GSC | TCO-27 | | |
| C7 | 10 | | 03164315 | MPO-S1.0 | TCZ-10 | CI0GC | TCO-10 | ET-541 | ST1CC-Q27 5% |
| C8 | 15 | | 03160250 | NTSO-S1.5 | TCN-15 | CI0GSU | TCT-15 | | ST1CU-Q |
| C9 | 100 | | 03164317 | NTSO-S1 100 | TCN-100 | CI0TSU | TCT-100 | MT-531 | ST1CU-T1 NTSO |
| C10 | 100 | | 03164043 | MFT-1000 | MFT-1000 | | | | SG0C-D1 |
| C11 | 100 | | 03164317 | NTSO-S1 100 | TCN-100 | CI0TSU | TCT-100 | MT-531 | ST1CU-T1 NTSO |
| C12 | 1-5 | | 03175000 | | ESB-4 | | | ESB-E | C7561 |
| C13 | 1000 | | 03160942 | EF-001 | MFT-1000 | | | | SG0C-D1 |
| C14 | 1000 | | 03160943 | EF-002 | MFT-1000 | | | | SG0C-D1 |
| C15 | 100 | | 03160252 | NTSO-S1 33 | TCN-33 | CI0GSU | TCT-33 | | NTSO |
| C16 | 5.5 | | 03160560 | | TCM-51 | CI0GBU | TCT-51 | | NTSO |
| C17 | 5.5 | | 03175650 | | | | | | |
| C18 | 27 | | 03163500 | NPO-S1 35 | TCZ-27 | CI0GBTC | TCO-27 | | ST1CC-Q27 5% |
| C19 | 1-5 | | 03175000 | | ESB-4 | | | ESB-E | C7561 |
| C20 | 3.3 | | 03153900 | NPO-S1 3.3 | TCZ-3R3 | CI0Y3C | TCO-3.3 | ZT-5533 | ST1CCB-V33 |
| C21 | 1.5 | | 03153850 | NPO-S1 1.5 | TCZ-1R5 | CI0Y1C | TCO-1.5 | ZT-5515 | ST1CCB-V15 |
| C22 | 470 | | 03163560 | NPO-S47 | TCZ-470 | BYA0T47 | ED-470 | UC-5547 | SGA-T47 |
| C23 | 470 | | 03163560 | DD-0047 | DD-471 | BYA0T47 | ED-470 | UC-5547 | SGA-T47 |
| C24 | 1000 | | 03153800 | DD-001 | DD-102 | BYA0X | ED-1000 | DC535 | SH5K-D5 |
| C25 | 10 | | 03139970 | | | | | | NI500 |
| C26 | 27 | | 03176500 | MPO-S1 25 | TCZ-27 | CI0GSTC | TCO-27 | CY551 | ST1CC-Q27 |
| C27 | 1500 | | 03153710 | DD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5218 | SH5K-D5 |
| C28 | 1000 | | 03160943 | EF-001 | MFT-1000 | | | | SG0C-D1 |
| C29 | 1000 | | 03160943 | EF-001 | MFT-1000 | | | | SG0C-D1 |
| C30 | 10 | | 03175000 | DD-0000 | DD-100 | L10GJ | ED-10 | UC-541 | SGA-Q1 |
| C31 | 33 | | 03138150 | NPO-S1 33 | TCZ-33 | CI0GSC | TCO-33 | ZT-5433 | ST1CC-Q33 NPO |
| C32 | 1.5 | | 03153480 | NPO-S1 1.5 | TCZ-1R5 | CI0Y1C | TCO-1.5 | ZT-5515 | ST1CCB-V15 |
| C33 | 27 | | 03175010 | NPO-S1 25 | TCZ-27 | CI0GSC | TCO-25 | ZT-5525 | ST1CC-Q27 NPO |
| C34 | 91 | | 03175270 | | | | | | |
| C35 | 150 | | 03175300 | DD-0001 | DD-121 | L10TJ | ED-130 | UC-5513 | SGA-T13 |
| C36 | 4.7 | | 03163690 | NPO-S1 4.7 | TCZ-4R7 | CI0Y4C | TCO-4.7 | ZT-5547 | ST1CCB-V47 |
| C37 | 1500 | | 03153710 | DD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5218 | SH5K-D5 |
| C38 | 1000 | | 03153700 | DD-001 | DD-102 | BYA0X | ED-1000 | DC531 | SH5K-D5 |
| C39 | 1500 | | 03153710 | DD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5218 | SH5K-D5 |
| C40 | 1500 | | 03153710 | DD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5218 | SH5K-D5 |
| C40A | 1000 | | 03173781 | DD-2200 | DD3-103 | BYC6D01 | ED4-001 | DCD501 | SH5K-I01 |
| | M 1000 | | | | | | | | |
| C41 | 1500 | | 03153710 | DD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5218 | SH5K-D5 |
| C42 | 1000 | | 03153700 | DD-001 | DD-102 | BYA0X | ED-1000 | DC531 | SH5K-D5 |
| C43 | 4.7 | | 03138590 | NPO-S1 4.7 | TCZ-4R7 | CI0Y4C | TCO-4.7 | ZT-5547 | ST1CCB-V47 NPO |
| C44 | 47 | | 03152150 | NPO-S1 47 | TCZ-47 | CI0Q4TC | TCO-47 | | ST1CC-Q47 NPO |
| C45 | 120 | | 03153240 | NTSO-S1 120 | TCN-120 | CI0T1U | TCT-120 | | NTSO |
| C47 | 018 | 200 | 03160280 | P388N-018 | DF-300 | CDS3818 | ED-18 | GEM-E13 | ST1M-S15 |
| C48 | 047 | 600 | 03161200 | DP-06 | DF-303 | CDS4847 | | GEM-4147 | ST1M-S47 |
| C49 | 1 | 600 | 03160360 | P388N-1 | DF-304 | CDS3P1 | | GEM-E1 | ST1M-S1 |
| C50 | 47 | | 03151550 | NPO-S1 47 | TCZ-47 | CI0Q4TC | TCO-47 | ZT-5547 | ST1CC-Q47 NPO |
| C51 | 047 | 600 | 03161200 | DP-06 | DF-303 | CDS4847 | | GEM-4147 | ST1M-S47 |
| C52 | 033 | 600 | 03161790 | DP-03 | DF-303 | CDS4533 | | GEM-4133 | ST1M-S33 |
| C53 | 1 | 600 | 03161800 | P388N-1 | DF-304 | CDS3P1 | | GEM-E1 | ST1M-S1 |
| C54 | 1000 | | 03153700 | DD-001 | DD-102 | BYA0X | ED-1000 | DC531 | SH5K-D5 |
| C55 | 033 | 300 | 03160090 | DP-03 | DF-303 | CDS3833 | | GEM-E33 | FTM-S33 |
| C56 | 0200 | 300 | 03124240 | HY3-0200 | DD3-202 | HY3D202 | HY3-1002 | DC702 | 203ED-D1 |
| C57 | 033 | 600 | 03161780 | DP-03 | DF-303 | CDS6533 | ED-03 | GEM-E133 | ST1M-S33 |
| C58 | 18 | 200 | 03160270 | P388N-18 | | CDS3818 | | GEM-E18 | ST1M-S18 |
| C59 | 1000 | | 03153700 | DD-001 | DD-102 | BYA0X | ED-1000 | DC531 | SH5K-D5 |
| C60 | 1 | 300 | 03160090 | DP-03 | DD-103 | CDS1B3 | ED-1000 | GEM-E1 | ST1M-S1 |
| C61 | 47 | 300 | 03160300 | P388N-47 | | CDS3347 | | GEM-E47 | ST1M-P47 |
| C62 | 1500 | | 03153710 | DD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5218 | SH5K-D5 |
| C63 | 5.5 | | 03154480 | NPO-S1 5.5 | TCZ-5R5 | CI0Y5C | TCO-5.5 | | ST1CCB-V55 |
| C64 | 47 | | 03151550 | NPO-S0004? | TCZ-47 | L10Q47 | ED-47 | UC-5547 | SGA-Q47 |
| C65 | 1500 | | 03153710 | DD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5218 | SH5K-D5 |
| C66 | 15 | | 03151050 | NPO-S1 15 | TCZ-15 | CI0Q15C | TCO-15 | | ST1CC-Q15 NPO |
| C67 | 1000 | | 03153700 | DD-001 | DD-102 | BYA0X | ED-1000 | DC535 | SH5K-D5 |
| C68 | 470 | | 03151840 | NPO-S0004? | TCZ-471 | L10Q471 | ED-470 | UC-5547 | SGA-T47 |
| C69 | 01 | 600 | 03161780 | DP-03 | DD-103 | CDS1B31 | GP-0100 | GEM-E13 | ST1M-S1 |
| C70 | 1000 | | 03153700 | DD-001 | DD-102 | BYA0X | ED-1000 | DC531 | SH5K-D5 |

# PARTS LIST AND DESCRIPTIONS

## CAPACITORS (cont)

| ITEM No. | RATING: CAP | VOLT | REPLACEMENT DATA: DUMONT PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| C71 | 047 | 200 | 03160340 | BPD-06 | DF-503 | CDS3847 | | GEM-3147 | ST1M-S47 | |
| C72 | 220 | | 03173940 | BPD-00053 | DD-331 | L10T33 | ED-330 | UC-5333 | SGA-T33 | |
| C73 | 3300 | | 03153350 | BPD-00053 | DE-333 | BYA10D33 | ED-3300 | UC-5333 | SGA-T33 | |
| C74 | 330 | | 03153020 | BPD-00053 | DD-331 | L10T33 | ED-330 | UC-533 | SGA-T33 | |
| C75 | 033 | 600 | 03153320 | BPD-03 | DF-503 | CDS6833 | | GEM-6133 | ST1M-S33 | |
| C76 | 01 | 400 | 03160090 | BPD-2E | DD-103 | CDS1B31 | GP-10000 | GEM-311 | ST1M-S1 | |
| C77 | 0082 | 400 | 03160410 | P488N-008 | | | | GEM-5283 | ST1M-D8 | |
| C78 | 3300 | | 03153320 | BPD-0033 | DE-333 | BYA10D33 | ED-0033 | UC-5333 | SGA-D33 | |
| C79 | 1 | 600 | 03161830 | P668N-1 | DF-104 | CDS6P1 | | GEM-601 | ST1M-P1 | |
| C80 | 1 | 600 | 03161840 | P668N-1 | DF-104 | CDS6P1 | | GEM-601 | ST1M-P1 | |
| C81 | 1000 | | 03160160 | HY0-102-1000 | HY0-102 | HY0D102 | DC50-103 | HY0D102 | | |
| C82 | 01 | 600 | 03160300 | BPD-01 | DD-103 | CDS2B1 | GP-10000 | GEM-311 | ST1M-S1 | |
| C83 | 033 | 600 | 03160320 | BPD-03 | DF-503 | CDS3833 | | GEM-4133 | ST1M-S33 | |
| C84 | 22 | | 03155330 | NTSO-S1 22 | TCN-220 | CI0G2SU | TCT-22 | | STCU-Q22 N750 | |
| C85 | 0047 | 400 | 03159683 | BPD-0047 | DE-473 | CUD4D47 | GP-4700 | GEM-4247 | 1FM-D47 | |
| C86 | 470 | | 03159685 | 1467-00047 | DE-471 | 5HS747 | GP-471 | UC-5547 | 1FM-S47 | |
| C87 | 047 | 600 | 03161830 | P668N-1 | DF-104 | CDS6P1 | | GEM-601 | ST1M-P1 | |
| C88 | 390 | | 03173210 | | | SHS733 | CY15C39J | | 1MS-S39 | 5% |
| C89 | 390 | | 03203050 | | | SHS733 | CY15C39J | | 1MS-S39 | 5% |
| C90 | 0047 | 600 | 03161780 | BPD-0047 | DE-473 | CUD4D47 | GP-4700 | GEM-6247 | ST1M-D47 | |
| C91 | 01 | 400 | 03160980 | BPD-01 | DD-103 | CDS4B1 | GP-10000 | GEM-411 | 4TM-S1 | |
| C92 | 47 | 4000 | 03189613 | HVD-50-47 | HVD-50-47 | HVB50Q47 | | | 50DA-247 | |
| C93 | 069 | 600 | 03160700 | BPD-06 | DF-503 | CDS4B47 | | GEM-4147 | 4TM-D47 | |
| C94 | 033 | 400 | 03160750 | | | | | | | |
| C95 | 068 | 300 | 03160100 | P388N-068 | | CDS4868 | | GEM-4168 | 4TM-S68 | |
| C96 | 75 | 3000 | 03284019 | | DD50-750 | HY3A3Q75 | | | | |
| C97 | 047 | 600 | 03161800 | BPD-06 | DF-503 | CDS6847 | | GEM-6147 | 6TM-S47 | |
| C98 | 033 | 600 | 03161780 | BPD-03 | DF-503 | CDS6833 | | GEM-6133 | 6TM-S33 | |

# CONTROLS

| ITEM No. | RATING: RESISTANCE | WATTS | REPLACEMENT DATA: DUMONT PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| R1 | 1Meg | 1/4 | 03170411 | | | | | Volume - Tap @ 500K |
| R2 | 500K | 1 | 03170401 | B-1S | Q17-1S4 | | | Contrast |
| R3A | 100K | ½ | 03170533 | B-40 | A47-100K-S | Q11-138 | U41 | Brightness |
| B | 85tap1 | | | Not Req. | KS6-1 | Not Req. | Not Req. | |
| R4A | 500K | 1/4 | 03170511 | B-1S | A47-750K-S | Q11-134 | U31 | Tone |
| B | 85tap1 | | | Not Req. | KS6-1 | Not Req. | Not Req. | |
| R5A | 50K | 1/4 | 03170531 | B-1S | A47-50K-S | Q11-123 | U31 | Horiz. Hold |
| B | 85tap1 | | | Not Req. | KS6-1 | Not Req. | Not Req. | |
| R6A | 1Meg | 1/4 | 03170535 | B-1S | A47-1Meg-S | Q11-137 | U34 | Vert. Hold |
| B | 85tap1 | | | Not Req. | KS6-1 | Not Req. | Not Req. | |
| R7A | 2Meg | 1/4 | 03170543 | B-94 | A47-2Meg-S | Q11-140 | TA36L | Vert. Size |
| B | 85tap1 | | | Not Req. | FKS-1 | Req. | Not Req. | |
| R8A | 1000 | ½ | 03170534 | B-1S | A47-1000-S | Q11-108 | U4 | Vert. Lin. |
| B | 85tap1 | | | Not Req. | FKS-1 | Req. | Not Req. | |
| R9A | 250K | ½ | 03170544 | B-30 | A47-250K-S | Q11-130 | TA354L | RF Delay |
| B | 85tap1 | | | Not Req. | FKS-1 | Req. | Not Req. | |
| R10A | 50K | ½ | 03170181 | B-30 | A47-50K-S | Q11-123 | U131 | Horiz. Drive |
| B | 85tap1 | | | Not Req. | FKS-1 | Req. | Not Req. | |
| R11 | 300K | ½ | 03170501 | | | | | Horiz. Freq. Set |

# RESISTORS

**All wattages 1/2 watt, or less, unless otherwise listed.**

| ITEM No. | RATING: OHMS | WATT | REPLACEMENT DATA: DUMONT PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|
| R12 | 10E | | 03151650 | BTS-10K | |
| R13 | 33E | | 03151850 | BTS-33K | |
| R14 | 680E | 5% | 03151150 | BTS-680K | 5% |
| R15 | 820E | 5% | 03151250 | BTS-820K | 5% |
| R16 | 3900Ω | | 03151840 | BTS-3900 | |
| R17 | 820Ω | | 03151760 | BTS-820 | |
| R18 | 100K | | 03153210 | BTS-100K | |
| R19 | 100K | | 03153210 | BTS-100K | |
| R20 | 3300Ω | | 03153330 | BTS-3300 | |
| R21 | 680Ω | | 03151740 | BTS-680 | |
| R22 | 100K | | 03153210 | BTS-100K | |
| R23 | 1000Ω | | 03153360 | BTS-1K | |
| R24 | 5600Ω | | 03151860 | BTS-5600 | |
| R25 | 33K | | 03153310 | BTS-33K | |
| R26 | 470Ω | 1 | 03204750 | BTA-470 | |
| R27 | 15K | | 03153150 | BTS-15K | |
| R28 | 100E | | 03151610 | BTS-100K | |
| R29 | 3300Ω | | 03153330 | BTS-3300 | |
| R30 | 390K | | 03153280 | | |
| R31 | 100K | | 03153210 | BTS-100K | |
| R32 | 2700Ω | 5% | 03150560 | | |
| R33 | 470Ω | | 03153610 | BTS-470 | |
| R34 | 47Ω | | 03151150 | BTS-47 | |
| R35 | 33E | | 03151850 | | |
| R36 | 470Ω | | 03153610 | BTS-470 | |
| R37 | 100E | 5% | 03153960 | | |
| R38 | 100E | 5% | 03153960 | BTS-100K | 5% |
| R39 | 5600Ω | | 03151870 | BTS-5600 | |
| R40 | 1MΩ | | 03151810 | BTS-1M | |
| R41 | 470Ω | | 03153400 | | |
| R42 | 180Ω | | 03151580 | BTS-180 | |
| R43 | 10K | | 03153190 | BTS-10K | |
| R44 | 3300Ω | | 03151830 | BTS-3300 | |
| R45 | 10K | | 03151190 | BTS-10K | |
| R46 | 3900Ω | | 03151840 | BTS-3900 | |
| R47 | 470Ω | | 03153610 | BTS-470 | |
| R48 | 470Ω | 1 | 03204850 | BTA-470 | |
| R49 | 33K | | 03153310 | BTS-33K | |
| R50 | 2700Ω | | 03151640 | BTS-2700 | |
| R51 | 39Ω | | 03151600 | BTS-39 | |
| R52 | 470K | | 03153610 | BTS-470K | |
| R53 | 13K | | 03151800 | BTS-13K | |
| R54 | 4500Ω | 4 | 03233070 | 13/4A-4500 | |
| R55 | 680Ω | 1 | 03204750 | BTA-680 | |
| R56 | 180Ω | 1 | 03204680 | BTA-180 | |
| R57 | 1.5Meg | | 03203150 | BTS-1.5Meg | |
| R58 | 68K | | 03151890 | BTS-68K | |
| R59 | 47K | | 03151670 | BTS-47K | |
| R60 | 120Ω | | 03203220 | BTS-120 | |
| R61 | 330Ω | | 03151820 | BTS-330 | |
| R62 | 33K | 1 | 03204850 | BTA-33K | |
| R63 | 470K | | 03151800 | BTS-470K | |
| R64 | 470K | | 03151670 | BTS-470K | |
| R65 | 10K | | 03151890 | BTS-10K | |
| R66 | 47K | 1 | 03204870 | BTA-47K | |
| R67 | 3300Ω | | 03203450 | BTS-3300 | |
| R68 | 120K | | 03153020 | BTS-120K | |
| R69 | 470Ω | | 03151850 | BTS-470 | |
| R70 | 68K | | 03231090 | BTS-68K | |
| R71 | 3300Ω | | 03203450 | BTS-3300 | |
| R72 | 100K | | 03203210 | BTS-100K | |
| R73 | 1000Ω | | 03203170 | BTS-1000 | |
| R74 | 33E | | 03203030 | BTS-33K | |
| R75 | 13K | 1 | 03204900 | BTA-13K | |
| R76 | 330Ω | | 03203170 | BTS-330 | |
| R77 | 470Ω | | 03203730 | BTS-470 | |
| R78 | 18E | | 03203010 | BTS-18K | |
| R79 | 1Meg | | 03203200 | BTS-1Meg | |
| R80 | 1Meg | | 03203200 | BTS-1Meg | |
| R81 | 150K | 1 | 03203150 | BTA-150K | |
| R82 | 470Ω | 4 | 03233080 | | |
| R83 | 3300Ω | 1 | 03204780 | BTA-330 | |
| R84 | 330Ω | | 03203170 | BTS-3000 | |
| R85 | 33E | | 03203050 | BTS-33K | |
| R86 | 220K | | 03203060 | BTS-220K | |
| R87 | 270K | 5% | 03203080 | BTS-270K | 5% |
| R88 | 33K | | 03203070 | BTS-33K | |
| R89 | 330K | | 03203070 | BTS-330K | |
| R90 | 39K | | 03203060 | BTS-390K | |
| R91 | 150K | | 03203560 | BTS-150K | |
| R92 | 2.7Meg | | 03203280 | BTS-2.7Meg | |
| R93 | 120K | | 03203230 | BTS-120K | |
| R94 | 47K | | 03203040 | BTS-47K | |
| R95 | 180K | | 03203060 | BTS-180K | |
| R96 | 1Meg | | 03203190 | BTS-1Meg | |
| R97 | 3000Ω | 5% | 03203400 | BTS-3000 | 5% |
| R98 | 2200Ω | | 03203180 | BTS-2200 | |
| R99 | 3300Ω | 1 | 03204383 | BTA-3300 | |
| R100 | 820Ω | 5% | 03203040 | BTS-820 | 5% |
| R101 | 820K | | 03203180 | BTS-820K | |
| R102 | 2.7Meg | | 03203180 | BTS-2.7Meg | |
| R103 | 3400Ω | 5% | 03203070 | BTS-3400 | 5% |
| R104 | 820K | | 03203540 | BTS-820K | |
| R105 | 2.1Meg | | 03203250 | BTS-2.1Meg | |
| R106 | 39K | 2 | 03207960 | BTS-39K | |
| R107 | 39K | 2 | 03207960 | BTS-39K | |
| R108 | 2200Ω | | 03203180 | BTS-2200 | |
| R109 | 68K | 1 | 03204960 | BTA-68K | |
| R110 | 82K | 1 | 03205000 | BTA-82K | |
| R111 | 22Ω | 1 | 03204610 | BTA-220 | |
| R112 | 470Ω | 3 | 03207720 | BTS-470 | |
| R113 | 10K | | 03204740 | | |
| R114 | 560Ω | | 03241740 | | |
| R115 | 12K | 1 | 03204900 | | |

# RESISTORS (cont)

| ITEM No | RATING: OHMS | WATT | REPLACEMENT DATA: DUMONT PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|
| R116 | 27K | | 03203460 | | |
| R117 | 270Ω 5% | | 03203580 | BTS-2700 5% | |
| R118 | 56K | | 03203180 | | |
| R119 | 100K 5% | | 03203060 | | |
| R120 | 10K 5% | | 03203720 | BTS-10K 5% | |
| R121 | 15K | | 03203810 | BTS-15K | |
| R122 | 680K | | 03203210 | BTS-680K | |
| R123 | 680 | | 03203350 | BTS-68 | |
| R124 | 1200Ω | 1 | 03204780 | BTA-1200 | |

# RESISTORS (cont)

| ITEM No | RATING: OHMS | WATT | REPLACEMENT DATA: DUMONT PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|
| R125 | 9000Ω | 10 | 03244900 | 1 3/4A-9000 | |
| R126 | 1000Ω | 1 | 03241770 | | |
| R127 | 4700Ω | 1 | 03204850 | BTA-4700 | |
| R128 | 10K | 3 | 03207890 | BTS-10K | |
| R129 | 18K | 1 | 03204920 | BTA-18K | |
| R130 | 10K | | 03203460 | BTS-10K | |
| R131 | 4600Ω | 4 | 03233100 | 1 3/4A-4600 | |
| R132 | 2000Ω | 10 | 03240880 | PW10-2000 | |
| R133 | 100K | 1 | 03204700 | BTA-100K | |

# TRANSFORMER (POWER)

| ITEM No. | RATING: PRI | SEC 1 | SEC 2 | SEC 3 | REPLACEMENT DATA: DUMONT PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC | 5.0VCT | 5V | 6.3V | 20010781 | | | | 26R88 ② | R-51BC ② | |
| | 2 A | 3A | 2.0A | 3 A | | | | | | | |

① Parallel and phase 6.3V ② 6A filament windings. Tape 6.3V ③ 1.5 A filament winding.
② Parallel and phase 6.3V filament windings.

# TRANSFORMERS (SWEEP CIRCUITS)

| ITEM No. | USE | REPLACEMENT DATA: DUMONT PART No. | Halldorson PART No. | Merit PART No. | RCA TYPE No. | Rem PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
|---|---|---|---|---|---|---|---|---|---|
| T2 | Vert. Osc. Trans. | 30009761 | B6704 | A 3003 | 208T1 | V405 | A 8125 | 26A03 | A-97X |
| T3 | Horiz. Output Trans. | 30009781 | F8949 * 5 | HVO-36* 5 | 220T1 & 224B1 * 5 | X094 * 5 | A-8253 * 5 | P-13 * 5 | S-56 * 5 |
| T4 | Vert. Output Trans. | 20006712 | Z2900 ② | A 30381 ② | | V310 ② | A-8145 ② | 26S53 ② | A-107X ② |
| T5A | Yoke (90°) Horiz. (110MH) | 4003846 | DF607 ① | MDF-92 ① | 235D1 ① | YW91R ① | DY-86A ① | Y-6 ① | Y-46 ① |
| B | Vert (42MH) | 89016894 & 20000771 ① | DF607 ① | MDF-92 ① | 235D1 ① | YW91R ① | DY -86A ① | Y-6 ① | Y-41 ① YC1 ① |
| T6 | Width Coil (1.3-8MH) | 20010103 | RF800 ① | MWC 6 | 21AL1 ① | 20UJ13 ① | WC-8 ① | WC-22 ① | WC-12 ① |

① Or(U see mounting holes(s)
② Use 11.4 to 1 turns ratio
③ Connect as auto transformer
④ Alternate part number.
⑤ Yoke rear cover and centering device.
⑥ Use original rear cover and centering device.
⑦ Use terminals #2 and #4.
# This part may be superceded by Paris Manufacturer's introduction of special unit for this application.

## *HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

| ORIGINAL TERMINAL (CONNECTION) | Halldorson Replacement Connections | Merit Replacement Connections | RCA Replacement Connections | Rem Replacement Connections | Stancor Replacement Connections | Thordarson Replacement Connections | Triad Replacement Connections |
|---|---|---|---|---|---|---|---|
| 9 | 9 | 9 | 9 | 9 | 8 | 8 | 8 |
| 2 | 7 | 7 | 7 | 7 | 1 | 7 | 7 |
| T | 4 | 4 | 4 | 3 | 3 | 3 | 4 |
| 3 | 3 | 3 | 3 | 4 | 4 | 1 | 3 |
| 4 | 6 | 6 | Term. "D" of 214S1 | 2 | 7 | Term. 1 of WC-22 | Orange Term of WC-12 |
| 1 | 2 | 1 | Term "E" of 214S1 | 6 | 6 | Term. 2 of WC-22 | Black Term. of WC-12 |
| Corner Notch (at 60 ⇒) | | | Terms "A" & "B" of 214S1 across #3 & #1. | | | Terms #7 & #4 of WC-20 across #3 & #1. | Red & blue terms of WC-12 across #3 & #1 |
| Spare Term | 5 | 5 | 5 | | | 5 | 5 |

③ If picture is out of phase, reverse either the primary of secondary windings of width coil.

# TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE: PRI | SEC | REPLACEMENT DATA: DUMONT PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T7 | 5300Ω | 3 4Ω tap & 16Ω | 20009791 | | | | | | |

# SPEAKER

| ITEM No. | TYPE: SIZE | FIELD | V. C. IMP. | REPLACEMENT DATA: DUMONT PART No. | QUAM PART No. | NOTES |
|---|---|---|---|---|---|---|
| SP1 | 4" x 6" | PM | 8-4Ω | 18005933 ① | 4BA1 | ① Alternate part #18003923 |

# COILS (RF-IF)

| ITEM No. | USE | DUMONT PART No. | NOTES |
|---|---|---|---|
| L1 | Ant. Trans. | 30009282 | |
| L2 | RF Coupler | 30009283 | |
| L3 | IF Trap | 21014481 | |
| L4 | UHF IF Input Coil | 21014303 | |

| ITEM No. | USE | DUMONT PART No. | NOTES |
|---|---|---|---|
| L5 | Fil. Choke | 21014833 | |
| L6 | RF Choke | 21015271 | |
| L7 | UHF IF Trans. | 20010641 | |
| L8 | Conv. Plate Coil | 21014901 | |

| ITEM No. | USE | REPLACEMENT DATA: DUMONT PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | NOTES |
|---|---|---|---|---|---|---|
| L9 | 40.25MC Coil | 21014941 | | | 6225 | |
| L10 | 47.25MC Trap | 21014963 | 30-1049 | TV-133 | 6225 | |
| L11 | 41.25MC Trap | 21014951 | | | | |
| L12 | 1st Video IF | 21014971 | | TV-131 | 6225 | |
| L13 | 47.25MC Trap | 21014931 | 30-1049 | | 6225 | |
| L14 | 2nd Video IF | 21011783 | 19-1001 | | 6804 | L 5 Microhenries |
| L15 | 2nd Video IF | 21008995 | 17-4522 | TV-130 | 6219 | |
| L16 | 3rd Video IF | 21008996 | 17-4523 | TV-129 | 6218 | |
| L17 | Fil. Choke | 21011783 | 19-1001 | | 6804 | L 5 Microhenries |

# PARTS LIST AND DESCRIPTIONS (Continued)

## COILS (cont)

| ITEM No. | USE | REPLACEMENT DATA | | | | NOTES |
|---|---|---|---|---|---|---|
| | | DUMONT PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | |
| L18 | 4th Video IF | 20008997 | 17-4523 | TV-130 | 6219 | |
| L19 | Series Peaking Coil | 21012451 | 19-6022 | | 4515 | 23 Microhenries |
| L20 | Shunt Peaking Coil | 21015561 | 19-4400 | | 6134 | 387 Microhenries |
| L21 | Series Peaking Coil | 21014257 | 19-3160 | TV-184 | 6180 | 162 Microhenries |
| L22 | 4.5MC Trap | 21013782 | 20-1004 | TV-151 | 1469 | |
| L23 | Shunt Peaking Coil | 21015562 | 19-3300 | | 6130 | 286 Microhenries |
| L24 | Series Peaking Coil | 21014251 | 19-3100 | | 6112 | 105 Microhenries |
| L25 | Series Peaking Coil | 21014255 | 19-3250 | TV-185 | 6181 | 233 Microhenries |
| L26 | Shunt Peaking Coil | 21014252 | 19-4201 | TV-184 | 6154 | 200 Microhenries |
| L27 | Series Peaking Coil | 21012451 | 19-6022 | | 4515 | 23 Microhenries |
| L28 | 1st Sound IF | 21013792 | 20-1004 | TV-151 | 1469 | |
| L29 | 2nd Sound IF | 21013913 | | | | |
| L30 | Ratio Det. | 20009043 | 17-3497* | TV-115* | 6205* | |
| L31 | RF Choke | 21006550 | | | | 8.2 Microhenries; IRC part #CL-1. |
| L32 | RF Choke | 21006550 | | | | 8.2 Microhenries; IRC part #CL-1. |
| L33 | RF Choke | 21012192 | | | | 2.77 Millihenries |

* Use adaptor plate.

## TRANSFORMER (HORIZ. OSC.)

| ITEM No. | DC RES. | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | DUMONT PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | RCA TYPE No. | Ram PART No. | Thordarson PART No. | |
| L34 | 53Ω | | 21010992 | 19-1576 | TV-163 | 6210 | | | HS-5 | |

## FILTER CHOKE

| ITEM No. | RATINGS | | | REPLACEMENT DATA | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE (0 CURRENT 1000 ∿) | DUMONT PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
| L35 | .310A | 43Ω | 1.9 HY | 21010954 | C5037 | C-2996 | C-2326 ① | 26C44 ① | C-17X |

① Drill one new mounting hole.

## COMPONENT COMBINATIONS

| ITEM No. | USE | DESCRIPTION | DUMONT PART No. | REPLACEMENT DATA | |
|---|---|---|---|---|---|
| K1 | Sound IF -Noise Inv. Cathode | 10000MMF, 5000MMF, 6800MMF, 680K, 220K | 88001691 | | |
| K2 | De-emphasis | 680MMF, 3300MMF, 5000MMF, 15K, 33K | 88001681 | | |
| K3 | Audio Couplate | 6800MMF, 4700MMF, 470K, 1Meg | 88001462 | | |
| K4 | Vertical Intergrator | 4700MMF, 4700MMF, 22K, 10K | 88001981 | Aerovox<br>Centralab<br>Sprague | PA-383-2<br>PC-106<br>V-5 |
| K5 | Sync Couplate | 1000MMF, 3300MMF, 1000MMF, 100K, 4.7Meg, 680K, 100K | 88001411 | | |

## FUSES

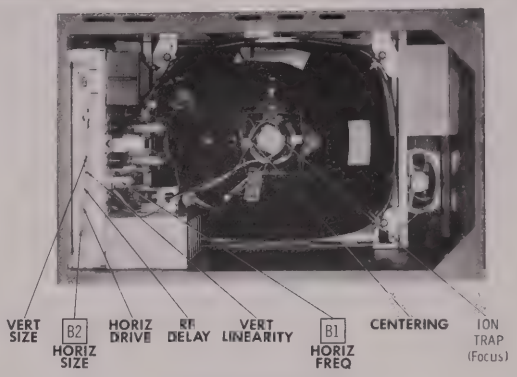
| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | DUMONT PART No. | | LITTELFUSE PART No. | | BUSS PART No. | |
| | | | FUSE | HOLDER | FUSE | HOLDER | FUSE | HOLDER |
| M1 | N | 3/4A 250V | 11006110 | 11006420 | 333.750 (N 3/4A) | 346010 | N 3/4A | HN 1/2 to 3/4 |

## CRYSTAL DIODES

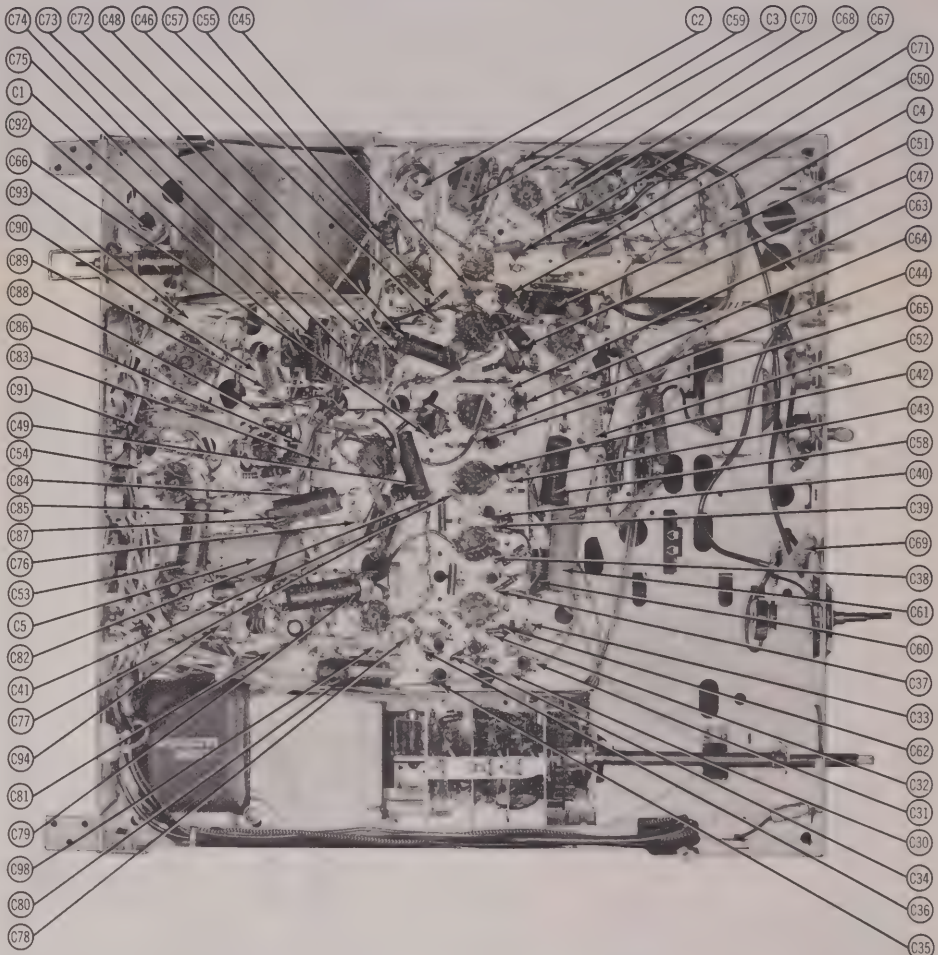
| ITEM No. | ORIG. TYPE | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|
| | | DUMONT PART No. | SYLVANIA PART No. | |
| M2 | 1N295 | | 1N60 | Video Detector (Pigtail) |

## MISCELLANEOUS

| ITEM No. | PART NAME | DUMONT PART No. | NOTES |
|---|---|---|---|
| M3 | Pilot Light | 12001310 | #47 Type |
| M4 | Tuner | 89014061 | VHF |
| | Tuner | 89014081 | UHF, Used with VHF Tuner 89014061 in chassis RA-373. |
| M5 | Switch | 05005120 | TV-Phono (Slide Type, DPDT and SPDT) |
| M6 | Switch | 05012191 | On-off (Push type) |
| M7 | Centering Device | 29000771 | Includes yoke cover |
| M8 | Ion Trap | 29000832 | |
| | Safety Glass | 45006734 | |
| | Mask | 64011814 | |
| | Knob | 45007351 | Volume |
| | Knob | 45007421 | Channel Selector, 13 position (Mahogany) |
| | Knob | 45007422 | Channel Selector, 13 position (Blond & Fruitwood) |
| | Knob | 45007431 | Fine tuning, Ch. RA-372 |
| | Knob | 45007432 | Fine tuning, Ch. RA-373 |
| | Dial | 45007411 | UHF, Mahogany |
| | Dial | 45007412 | UHF, Blond & Fruitwood |




CABINET-REAR VIEW




CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

# FIRESTONE
# MODEL 4-A-149 (Code 297-5-524)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

FIRESTONE
MODEL 4-A-149 (Code 297-5-524)

FIRESTONE
MODEL 4-A-149 (Code 297-5-524)

| | |
|---|---|
| TRADE NAME | Firestone Model 4-A-149 (Code 297-5-524) |
| SUPPLIER | Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron, Ohio |
| TYPE SET | AC-DC Operated AM Receiver |
| TUBES (Four) | Types 12AU6 Converter, 12AV6 Det.-AF Amp., 50C5 Output, 35W4 Rectifier |
| POWER SUPPLY | 110-120 Volts AC-DC — RATING .24 Amp. @ 117 Volts AC |
| TUNING RANGE—BROADCAST | 540KC-1600KC |

## ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | .05MFD | High side to antenna stator lug. Low side to B-. | 455KC (400~Mod) | Tuning gang fully open | Across voice coil | A1, A2 | Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. |
| 2. | " | " | 1620KC | " | " | A3 | " |
| 3. | | Loop | 1400KC | Tune to 1400KC signal | " | A4 | Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. |

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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# PARTS LIST AND DESCRIPTIONS

FIRESTONE
MODEL 4-A-149

## TUBES ( GENERAL ELECTRIC, SYLVANIA )

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | Converter | 12AU6 | |
| V2 | Detector-AF Amplifier | 12AV6 | |
| V3 | Output | 50C5 | |
| V4 | Rectifier | 35W4 | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT. | FIRESTONE PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A | 40 | 150 | R-1482 | PRS150/25V | BBRT4215C | TCT3114 | TDLT-12 | FMT-321 | TVA-3423 |
| B | 20 | 150 | | 4020/20 | | | | | |
| C | 20 | 15 | | | | | | | |

## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | FIRESTONE PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C2 | 100 | | N-6015 | SI 100 | D6-101 | TP34 | GP-100 | UC-531 | 5GA-T1 | |
| C3 | 56 | | | | | | | | | |
| C4 | 56 | | | | | | | | | |
| C5 | 10000 | | * N-9062 | BPD-01 | DD-103 | K082 | ED-01 | DC511 | 5HK-S1 | |
| C6 | .022 | 400 | N-1461 | BPD-02 | DF-203 | CUB4S22 | ED-02 | GEM-4122 | 4TM-S22 | |
| C7 | .047 | 200 | R-1462 | BPD-05 | DF-503 | CUB2S47 | | GEM-4147 | 2TM-S47 | |

## CONTROLS

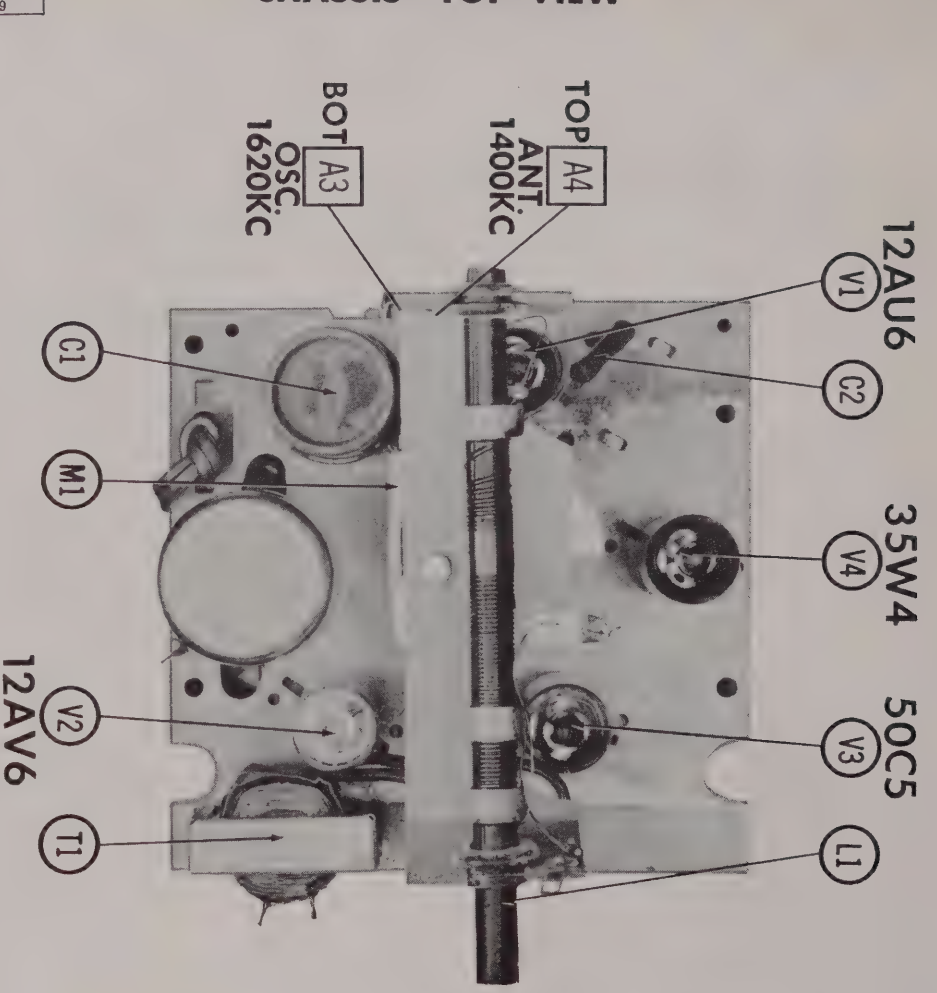
| ITEM No. | RATING | | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| | RESISTANCE | WATTS | FIRESTONE PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | |
| R1A | 2Meg | ½ | R-1455 | AB-76 | A47-2Meg-Z | Q13-139 | U55 | Volume |
| B | Shaft | | | AK-4 | KSS-3 | Not Req. | Not Req. | |
| C | Switch | | | KB-1 | SWE-12 | 76-1 | US-26 | |

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | FIRESTONE PART No. | IRC PART No. | |
| R2 | 2.7Meg | | N-8027 | BTS-2.7Meg | |
| R3 | 180Ω | | N-4067 | BTS-180 | |
| R4 | 2200Ω | | N-4896 | BTS-2200 | |
| R5 | 22Ω | | N-5889 | BTS-22 | |
| R6 | 68Ω | 2 | R-1483 | | |

## CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | FIRESTONE PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T1 | 3200Ω | 3-4Ω | R-1480 | Z1101 | A-3025 | A-3332 | 26S58 | S-12X | |

## SPEAKER

| ITEM No. | RATINGS | | | REPLACEMENT DATA | | | NOTES |
|---|---|---|---|---|---|---|---|
| | SIZE | FIELD | V. C. IMP. | FIRESTONE PART No. | QUAM PART No. | | |
| SP1 | 4" | PM | 3-4Ω | R-1478 | 4A07 | | |

## COILS (RF-IF)

| ITEM No. | USE | REPLACEMENT DATA | | | | NOTES |
|---|---|---|---|---|---|---|
| | | FIRESTONE PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | |
| L1 | Loop Stick | R-1811 | | | | |
| L2 | Osc. Coil | R-1486 | | | | |
| L3 | IF Trans. | R-1484 | | | | |

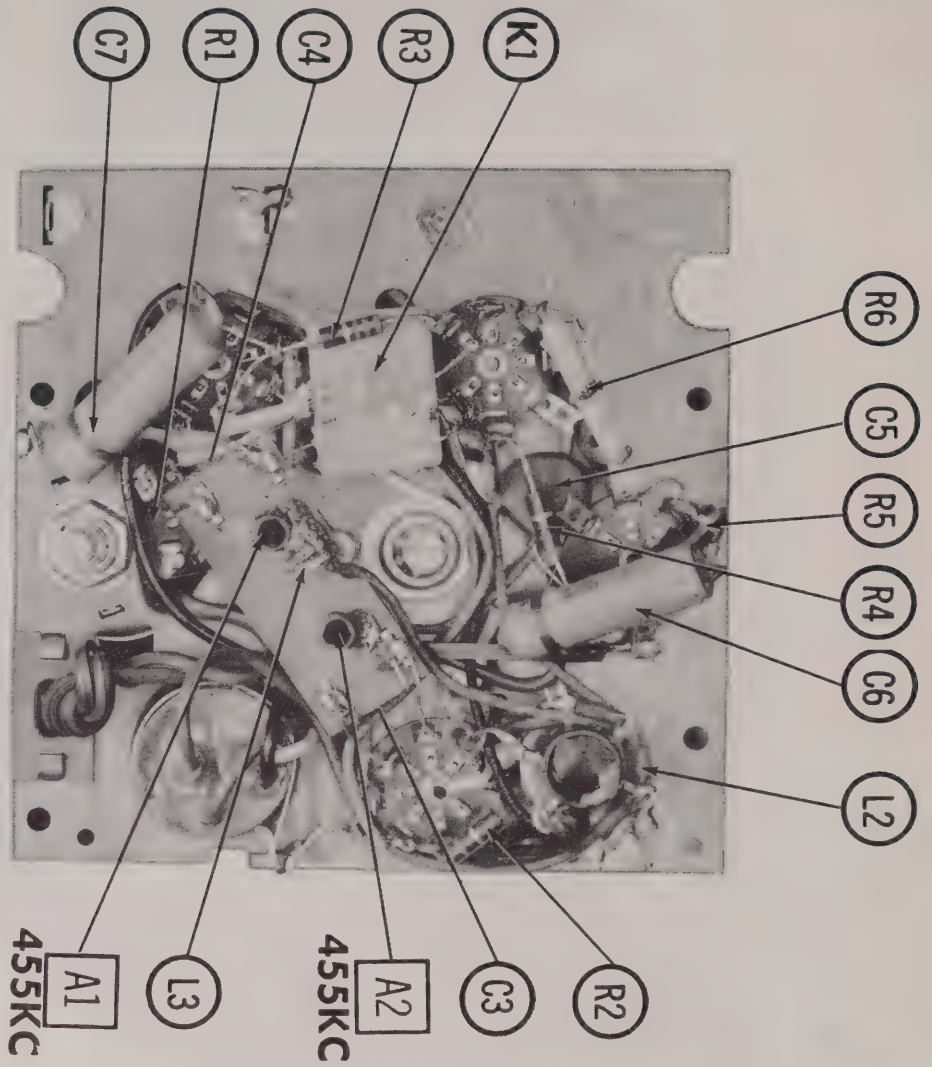
## COMPONENT COMBINATIONS

| ITEM No. | USE | DESCRIPTION | FIRESTONE PART No. | REPLACEMENT DATA | |
|---|---|---|---|---|---|
| K1 | Detector-Audio Circuit | 5000MMF, 2000MMF, 220MMF, 250MMF, 6.8Meg, 470K, 470K | R-1487 | Aerovox<br>Centralab<br>Cornell-Dubilier<br>Erie<br>Sprague | PA-113-1<br>PC-150<br>116TM1<br>1408-01<br>DT-1 |

## MISCELLANEOUS

| ITEM No. | PART NAME | FIRESTONE PART No. | NOTES |
|---|---|---|---|
| M1 | Tuning Cap. | R-1481 | 2 Gang (21-290MMF, 12-115MMF) |
| | Cabinet | #524 | White |
| | Cabinet | #525 | Red |
| | Cabinet | #526 | Mahogany |
| | Cabinet | #564 | Green |
| | Knob | R-1805 | Volume |
| | Knob | R-1647 | Tuning (Blue) |
| | Knob | R-1649 | Tuning (beige) |
| | Knob | R-2027 | Tuning (Ivory) |

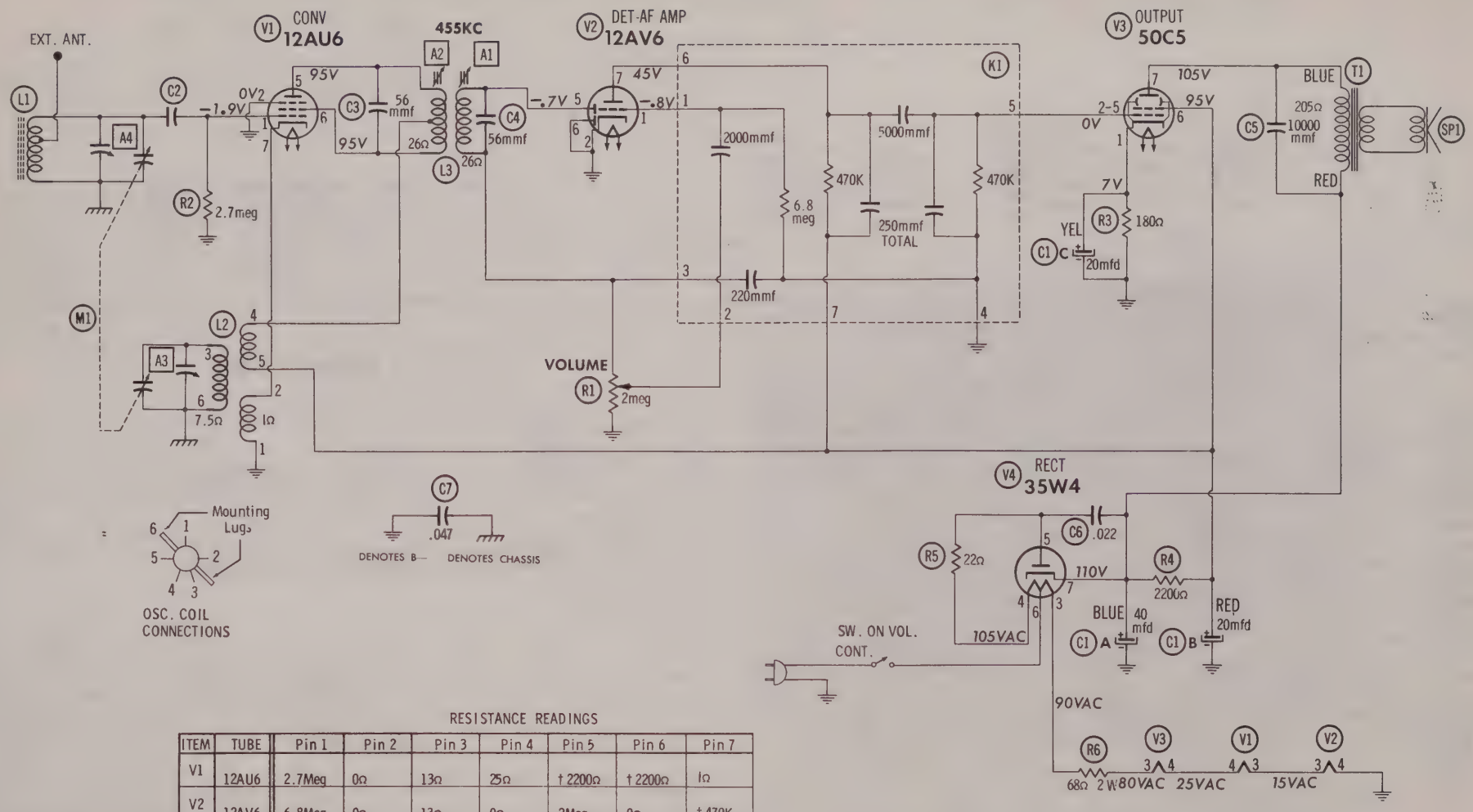
## CHASSIS—BOTTOM VIEW








FIRESTONE MODEL 4-A-149




RESISTANCE READINGS

| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 |
|---|---|---|---|---|---|---|---|---|
| V1 | 12AU6 | 2.7Meg | 0Ω | 13Ω | 25Ω | †2200Ω | †2200Ω | 1Ω |
| V2 | 12AV6 | 6.8Meg | 0Ω | 13Ω | 0Ω | 2Meg | 0Ω | †470K |
| V3 | 50C5 | 180Ω | 470K | 75Ω | 25Ω | 470K | †2200Ω | †205Ω |
| V4 | 35W4 | NC | NC | 145Ω | 180Ω | 205Ω | 175Ω | 100K |

† MEASURED FROM PIN 7 OF V4.
NC NO CONNECTION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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KNIGHT
MODEL 93SZ655

KNIGHT
MODEL 93SZ655

| | |
|---|---|
| TRADE NAME | Knight Model 93SZ655 |
| SUPPLIER | Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill. |
| TYPE SET | AC Operated 3 Channel 15 Watt Audio Amplifier |
| TUBES (Five) | Types 6SJ7 Mic Preamplifier, 6SC7 AF Amp.-Phase Inv., (2) 6V6GT Output, 5Y3GT Rectifier |
| POWER SUPPLY | 105-130 Volts AC 50/60 Cycles RATING .8 Amp. @ 117 Volts AC (75 Watts) |



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# PARTS LIST AND DESCRIPTIONS

KNIGHT MODEL 93SZ655

## TUBES ( GENERAL ELECTRIC, SYLVANIA)

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | Mic Preamplifier | 6SJ7 | |
| V2 | AF Amp. -Phase Inv. | 6SC7 | |
| V3 | Output | 6V6GT | |

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V4 | Output | 6V6GT | |
| V5 | Rectifier | 5Y3GT | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT. | KNIGHT PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A | ▪40 | 450 | | AFH3-41 | CO320 | FP396. 2 | TMT-36 | Q-055 | TVL-3783 |
| B | ■10 | 450 | | | | | | | |
| C | ▲10 | 450 | | | | | | | |
| C2 | 8 | 450 | | PRS450V8 | BR845 | TC71 | TD-8-450 | FM-4508 | TVA-1704 |
| C3 | 35 | 50 | | PRS150V40 | BR505 | TC39 | TD-50-50 | FM-0550 | TVA-1308 |

## FIXED CAPACITORS

**Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | KNIGHT PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C4 | .047 | 600 | | BPD-05 | DF-503 | CUB6S47 | | GEM-6147 | 6TM-S47 | |
| C5 | .047 | 600 | | BPD-05 | DF-503 | CUB6S47 | | GEM-6147 | 6TM-S47 | |
| C6 | .047 | 600 | | BPD-05 | DF-503 | CUB6S47 | | GEM-6147 | 6TM-S47 | |
| C7 | 220 | | | 1468-00022 | D6-221 | 5W5T22 | GP-220 | UC-5322 | 1FM-322 | |
| C8 | .0022 | 600 | • | BPD-0022 | D6-222 | CUB6D22 | ED-0022 | GEM-6222 | 6TM-D22 | |
| C9 | .047 | 600 | | BPD-05 | DF-503 | CUB6S47 | | GEM-6147 | 6TM-S47 | |
| C10 | .047 | 600 | | BPD-05 | DF-503 | CUB6S47 | | GEM-6147 | 6TM-S47 | |
| C11 | .05 | 600 | | BPD-05 | DF-503 | CUB6S5 | | GEM-615 | 6TM-S5 | |
| C12 | .047 | 600 | | BPD-05 | DF-503 | CUB6S47 | | GEM-6147 | 6TM-S47 | |

## CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| | RESISTANCE | WATTS | KNIGHT PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | |
| R1A | 500K | ½ | | AB-59 | A47-500K-S | Q11-133 | U50 | Phono |
| B | Shaft | | | AK-4 | KSS-3 | Not Req. | Not Req. | |
| C | Switch | | | KB-1 | SWE-12 | 76-1 | US-26 | |
| R2A | 500K | ½ | | AB-60 | A47-500K-Z | Q13-133 | U48 | Mic. |
| B | Shaft | | | AK-4 | KSS-3 | Not Req. | Not Req. | |
| R3A | 500K | ½ | | AB-60 | A47-500K-Z | Q13-133 | U48 | Tone |
| B | Shaft | | | AK-4 | KSS-3 | Not Req. | Not Req. | |

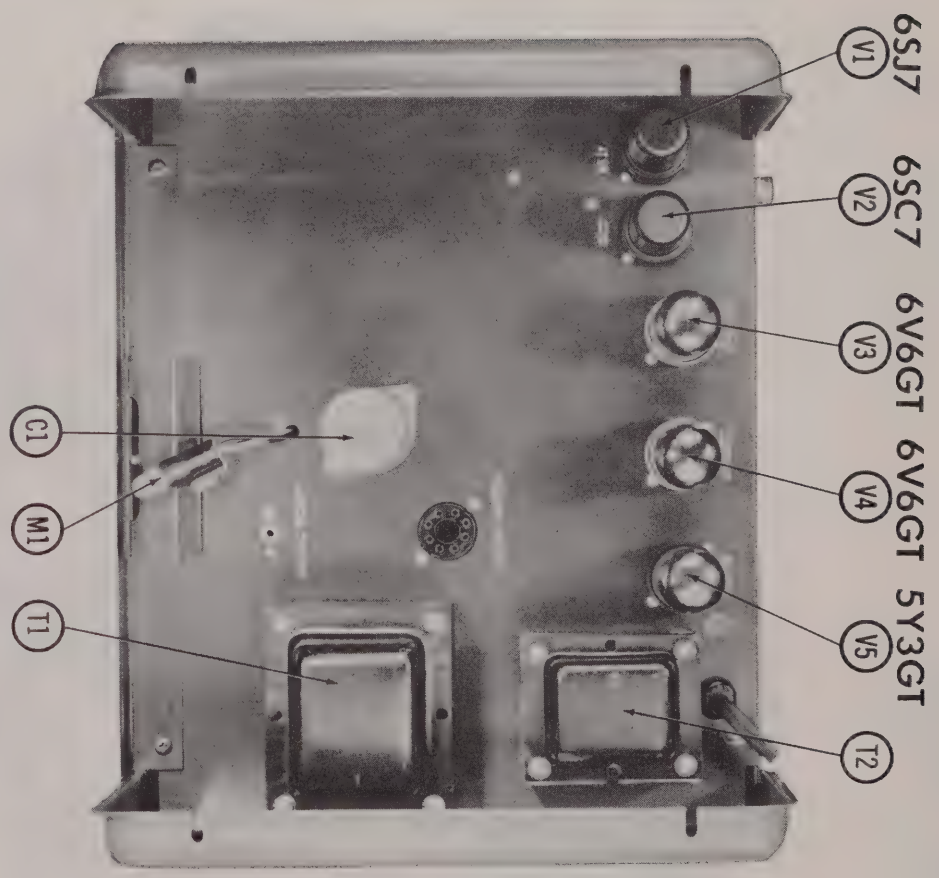
## RESISTORS

**All wattages 1/2 watt, or less, unless otherwise listed.**

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | KNIGHT PART No. | IRC PART No. | |
| R4 | 100K | | | BTS-100K | |
| R5 | 10Meg | | | BTS-10Meg | |
| R6 | 470K | | | BTS-470K | |
| R7 | 2. 2Meg | | | BTS-2. 2Meg | |
| R8 | 470K | | | BTS-470K | |
| R9 | 470K | | | BTS-470K | |
| R10 | 10K | | | BTS-10K | |
| R11 | 470K | | | BTS-470K | |

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | KNIGHT PART No. | IRC PART No. | |
| R12 | 470K | | | BTS-470K | |
| R13 | 1500Ω | | | BTS-1500 | |
| R14 | 10K | | | BTS-10K | |
| R15 | 10K | | | BTS-10K | |
| R16 | 470K | | | BTS-470K | |
| R17 | 250Ω | 10 | | PW10-250 | |
| R18 | 3300Ω | 1 | | BTA-3300 | |

## CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (POWER)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. 1 | SEC. 2 | SEC. 3 | KNIGHT PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
| T1 | 130VAC tap @ 117VAC @ .8A | 650VCT @ .085A | 5VAC @ 3A | 6.3VCT @ 1.85A | LP-0168 | | | | 22R06 ① | |

① This transformer does not provide a tap on primary winding for 130VAC input.

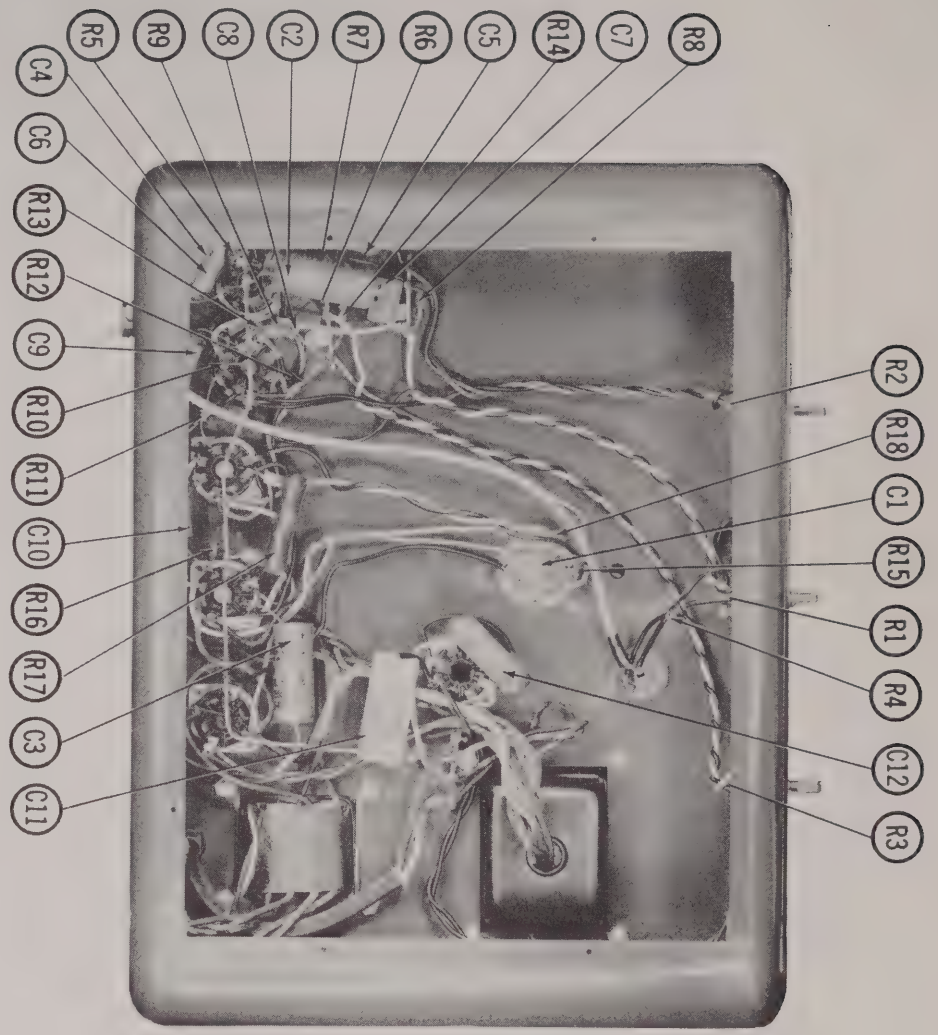
## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | KNIGHT PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T2 | 10K CT | 500Ω tap @ 333Ω (70V), 250Ω, 16Ω, 8Ω, 4Ω | LO-0092-B | | | | | | |

## MISCELLANEOUS

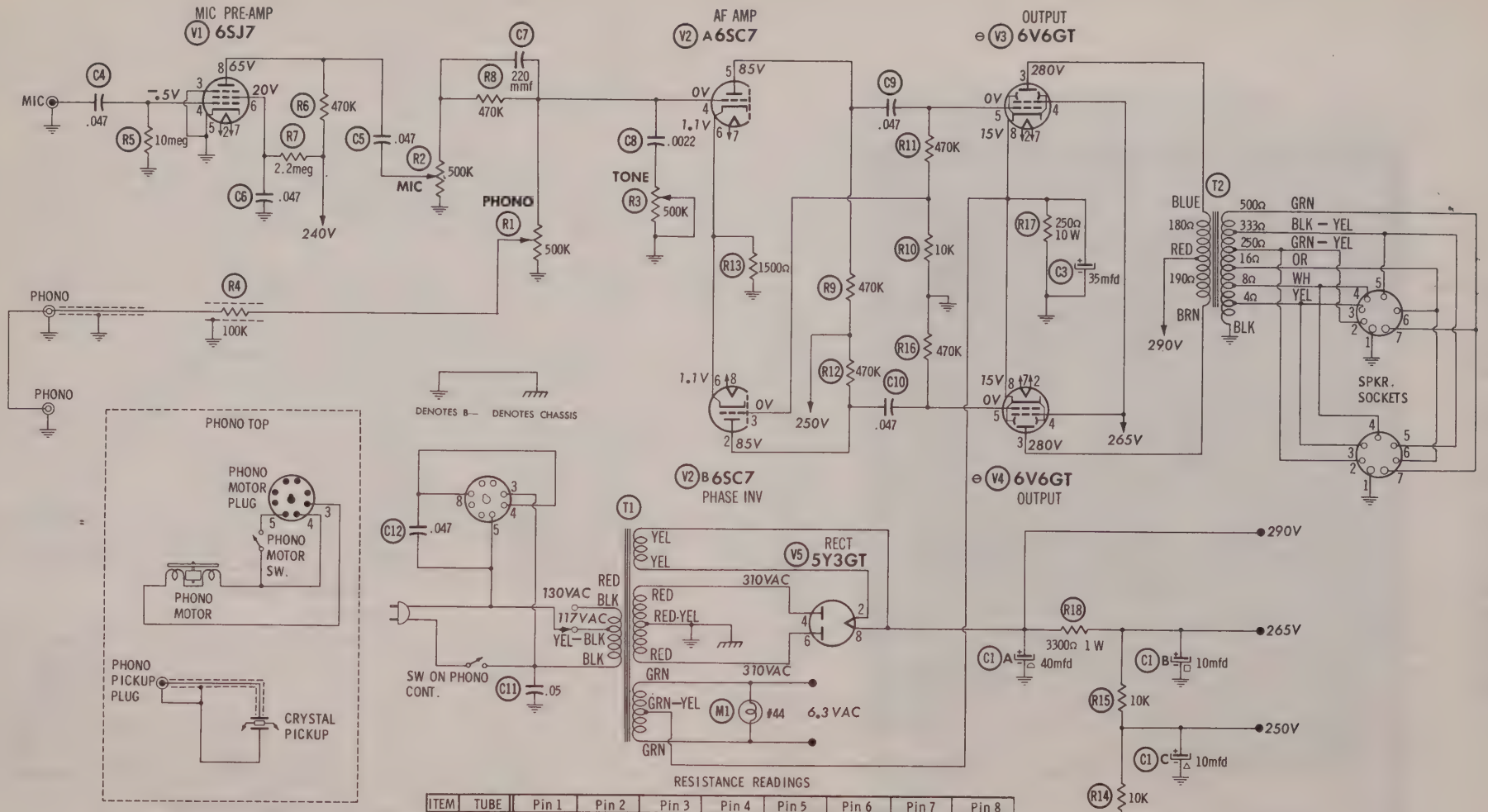
| ITEM No. | PART NAME | KNIGHT PART No. | NOTES |
|---|---|---|---|
| M1 | Pilot Light | | #44 |

## CHASSIS—BOTTOM VIEW






KNIGHT MODEL 93SZ655




RESISTANCE READINGS

| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|---|---|---|---|---|---|---|---|---|---|
| V1 | 6SJ7 | 0Ω | 250Ω | 0Ω | 10Meg | 0Ω | †2.2Meg | 250Ω | †495K |
| V2 | 6SC7 | 0Ω | †485K | 10K | 340K | †485K | 1500Ω | 250Ω | 250Ω |
| V3 | 6V6GT | 0Ω | 250Ω | †180Ω | †3300Ω | 480K | NC | 250Ω | 250Ω |
| V4 | 6V6GT | NC | 250Ω | †190Ω | †3300Ω | 470K | NC | 250Ω | 250Ω |
| V5 | 5Y3GT | NC | 50K | NC | 76Ω | NC | 72Ω | NC | 50K |

† MEASURED FROM PIN 8 OF V5.
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

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*TRADE MARK

RETMA MEMBER

# MAGNAVOX CHASSIS CMUA458BA, CB, CMUD447CB, CTA458BA, CB, CTD447CB

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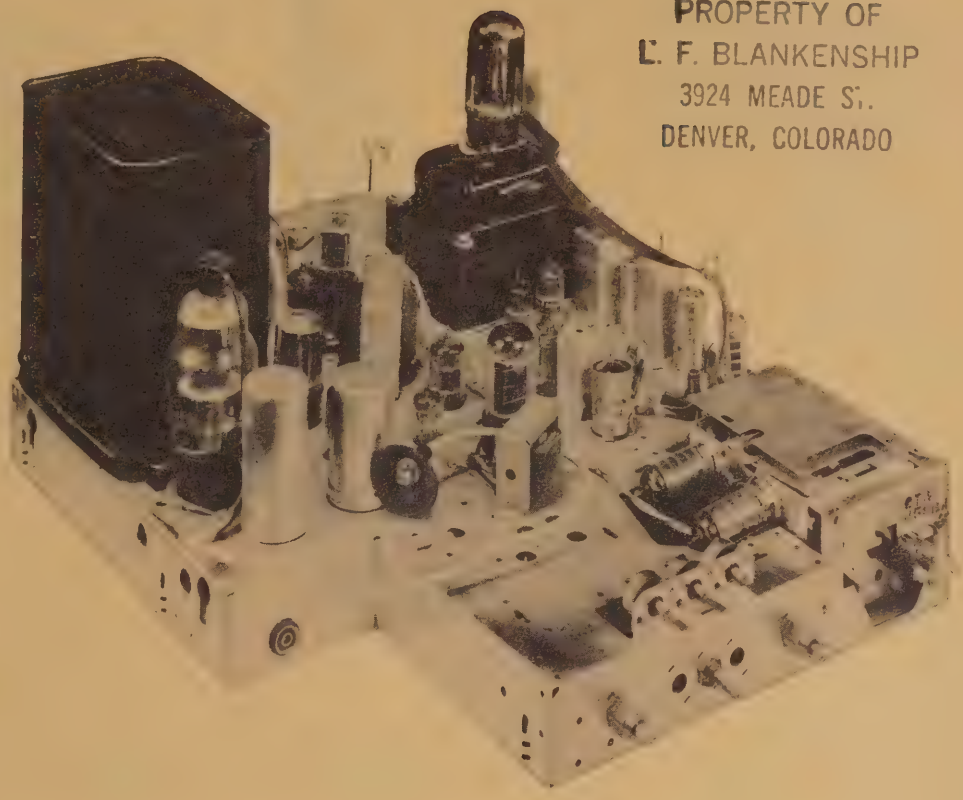

MAGNAVOX CHASSIS CMUA458BA, CB, CMUD447CB, CTA458BA, CB, CTD447CB

MAGNAVOX CHASSIS CTA458BA

| | |
|---|---|
| TRADE NAME | Magnavox Chassis CMUA458BA, CB, CMUD447CB, CTA458BA, CB, CTD447CB |
| MANUFACTURER | Magnavox Co., 2131 Bueter Road, Fort Wayne 4, Indiana |
| TYPE SET | Television Receiver |
| TUBES | Twenty-one |
| POWER SUPPLY | 110-120 Volts AC, 60 Cycles RATING 200 Watts, 1.8 Amp. @ 117 Volts AC |
| TUNING RANGE | Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier) |

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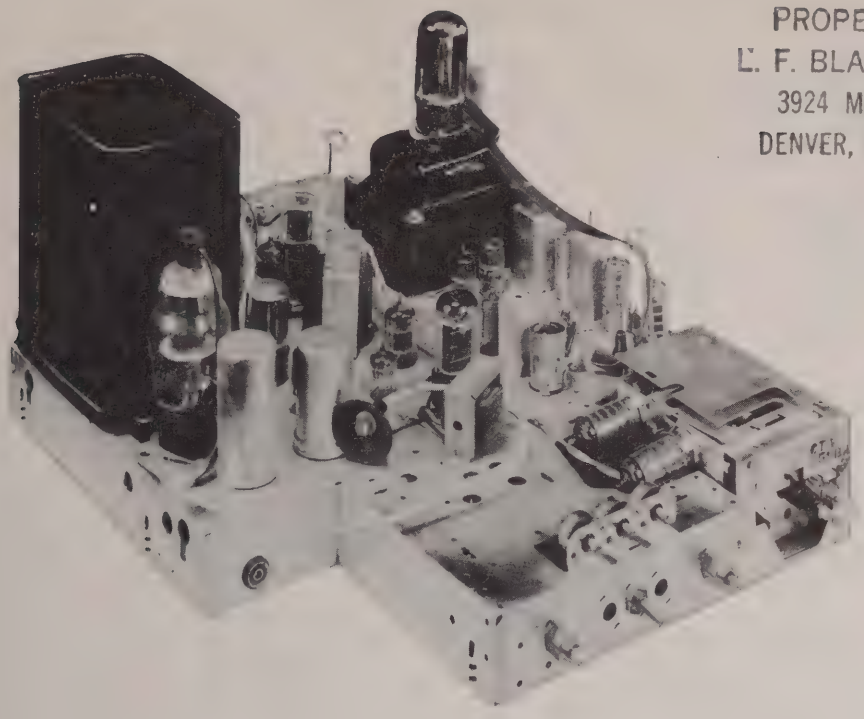

CHASSIS

CMUA458BA, CB, CMUD447CB, CTA458BA, CB, CTD447CB

## SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. One slug for HIGH band adjustment is located at 11 o'clock and should be adjusted first. The LOW band adjustment is located at 6 o'clock. Adjust for best picture and sound.

FOCUS

The focus may be varied in steps by the position of a plug in the focus adjustment board. Readjust the Ion trap for the best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator, it is necessary to remove the rear cover and supply power to set. Set the horizontal hold at the center of its range and adjust the horiz. freq. slug (B1) until the picture synchronizes horizontally. (For location see tube placement chart.)

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (A11) located on top of chassis.

FUSES

One fuse is used for horiz. sweep circuit protection. (For location see tube placement chart.)

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

MAGNAVOX CHASSIS CMUA458BA, CB, CMUD447CB, CTA458BA, CB, CTD447CB

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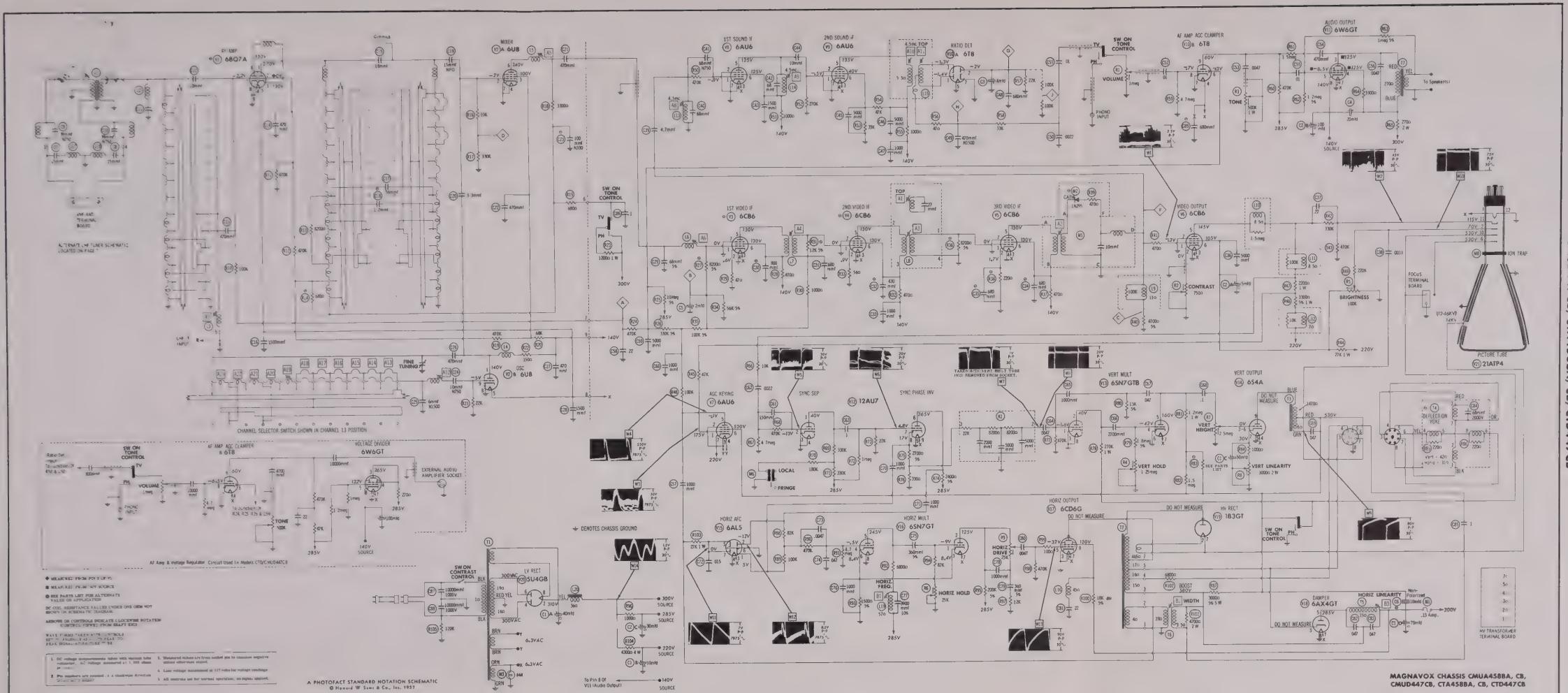
DATE 5-57 SET 358 FOLDER 7




MAGNAVOX CHASSIS CMUA458BA, CB,
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# TUBE PLACEMENT CHART

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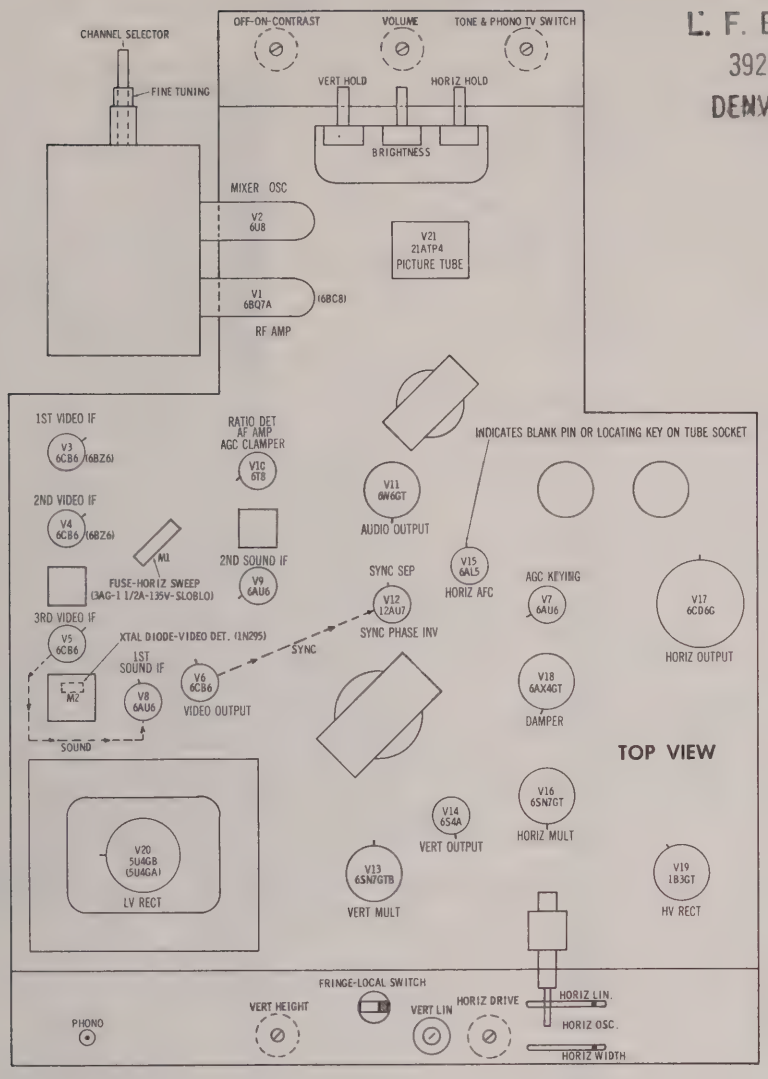



# TUBE FAILURE CHECK CHART

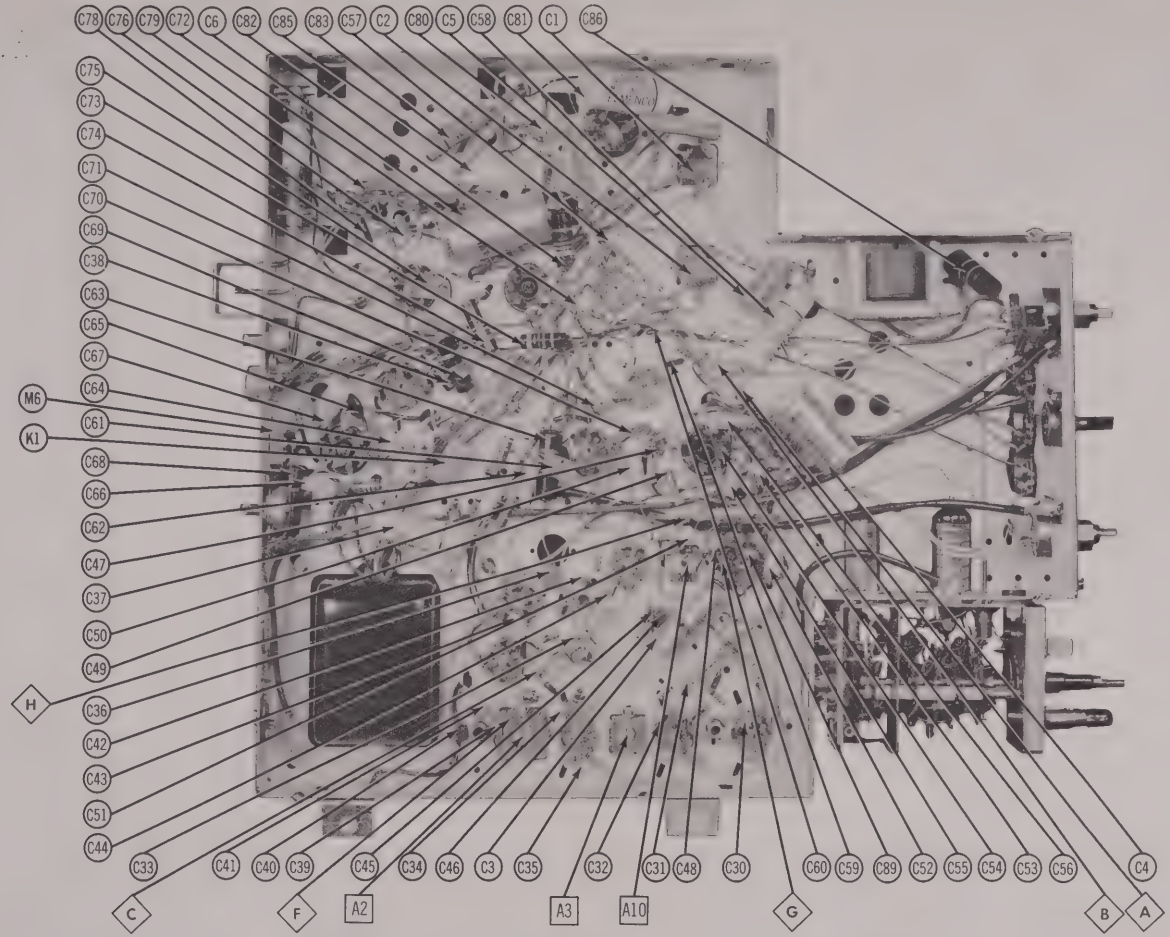
The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V20

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V3, V4, V5, Diode (M2), V7, V11
No pic, no sound, has snow - V1, V2, V3, V10, V11
No pic, has sound, has raster - V6, V21
Has pic, no sound - V8, V9, V10, V11
Overloaded picture - V7

SYNC FAILURE
No vert. sync - V12
No horiz. sync - V12, V15
No vert. or horiz. sync - V12

SWEEP FAILURE
No raster, has sound - V15, V16, V17, V18, V19, V21, Fuse (M1)
No vertical deflection - V13, V14
Poor vert. linearity or foldover - V13, V14
Poor horiz. linearity or foldover - V16, V17, V18
Narrow picture - V16, V17, V18, V20
Vert. off freq. - V13
Horiz. off freq. - V15, V16




CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

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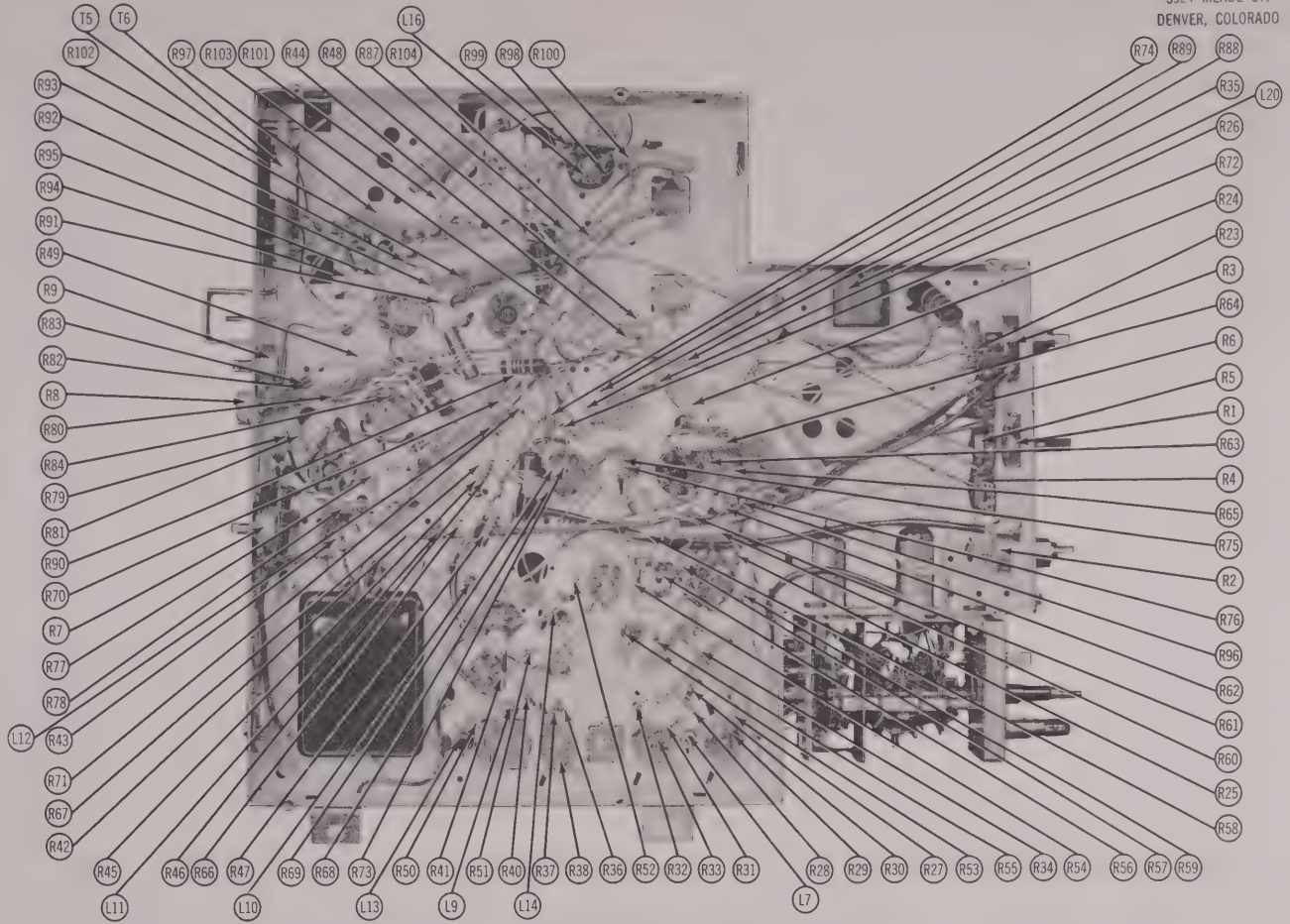



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

# ALIGNMENT INSTRUCTIONS

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

The high voltage lead should be securely taped and kept away from the chassis.

**VIDEO IF ALIGNMENT**

Connect the negative lead of a 3 volt bias supply to point Ⓐ and the negative lead of a 1.5 volt bias supply to point Ⓑ.
Connect the positive leads to chassis.
In step 1 it is possible to obtain two settings at which the marker will be in correct position, use the one with the slug farthest counter clockwise.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1. | .001MFD | High side to pin 1 (grid) of 6BZ6 (V3). Low side to chassis. | 43.0MC (10MC Swp) | 47.25MC (400∿ 30% AM Mod) | Any unused high band channel | Vert. Amp. thru 10K to point Ⓒ. Low side to chassis. | A1 | Couple a second generator to point Ⓓ to provide markers. Adjust to center 47.25MC markers in trap notch as in Fig. 1. Use enough sweep output so that trap notch is visible on scope. |
| 2. | " | " | " | 42.75MC<br>45.0MC<br>45.75MC<br>47.25MC | " | " | A2, A3, A4 | Attenuate sweep generator output for 2 volts peak to peak on the scope. Adjust for response similar to Fig. 2. Adjust A2 for maximum gain and MINIMUM tilt. A3 positions 45.75MC marker. A4 positions 42.75MC marker. Recheck A1 adjustment for correct 47.25MC position. See Fig. 1. |
| 3. | | High side to point Ⓓ. Low side to chassis. | " | " | " | " | A5, A6 | Adjust A5 for maximum gain and place 45.75MC marker at 50% on response curve as in Fig. 2. Adjust A6 for maximum amplitude and correct tilt. Repeat adjustment of A5 and A6 (if necessary) several times to obtain response within limits. (See Fig. 2). |
| 4. | " | " | 213MC (10MC Swp) | " | 13 | " | | Couple marker generator loosely to pin 1 (grid) of 6BZ6 (V3). Check for response similar to Fig. 2 on all VHF channels. Response should be within limits shown by dotted lines. If necessary, repeat steps 1 thru 4. |
| | | | 207MC (10MC Swp) | | 12 | | | |
| | | | 201MC (10MC Swp) | | 11 | | | |
| | | | 195MC (10MC Swp) | | 10 | | | |
| | | | 189MC (10MC Swp) | | 9 | | | |
| | | | 183MC (10MC Swp) | | 8 | | | |
| | | | 177MC (10MC Swp) | | 7 | | | |
| | | | 85MC (10MC Swp) | | 6 | | | |
| | | | 79MC (10MC Swp) | | 5 | | | |
| | | | 69MC (10MC Swp) | | 4 | | | |
| | | | 63MC (10MC Swp) | | 3 | | | |
| | | | 57MC (10MC Swp) | | 2 | | | |
| 5. | 1000Ω Carbon Resistor | High side to point Ⓔ. Low side to chassis. | 43 MC (10MC Swp) | 45.75MC | UHF | | A7 | Turn tuner to UHF position. Adjust A7 for MINIMUM tilt with 45.75MC marker on high frequenc slope of curve as in Fig. 2. |

**SOUND IF ALIGNMENT**

Connect two matched 100K (±1%) resistors in series from point Ⓖ to chassis. The junction of these two resistors is alignment point Ⓙ as shown on the schematic.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6. | .005MFD | High side to point Ⓕ. Low side to chassis. | 4.5MC (Unmod) | Any unused channel | DC probe thru 100K to point Ⓖ. Common to chassis. | A8, A9, A10 | Adjust for maximum deflection. Keep signal low enough to obtain 6½ to 7 volts on VTVM. |
| 7. | " | " | " | " | DC probe thru 100K to point Ⓗ. Common to point Ⓙ. | A11 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |

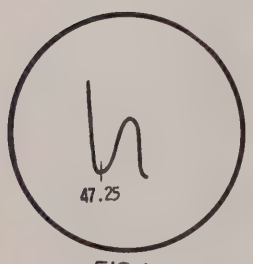


FIG. 1

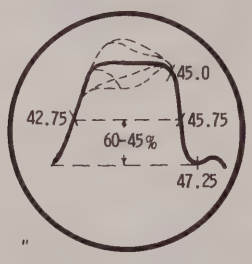


FIG. 2

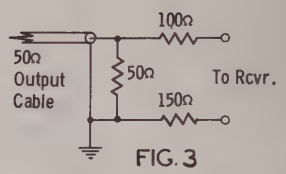


FIG. 3

# ALIGNMENT INSTRUCTIONS (cont)

VHF OSCILLATOR ALIGNMENT

Loosely couple an RF signal generator to the grid of the first Video IF Amplifier tube (V3) and tune it accurately to 45.75MC.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the center of its range.
Use only enough sweep generator output to provide usable pattern on scope.

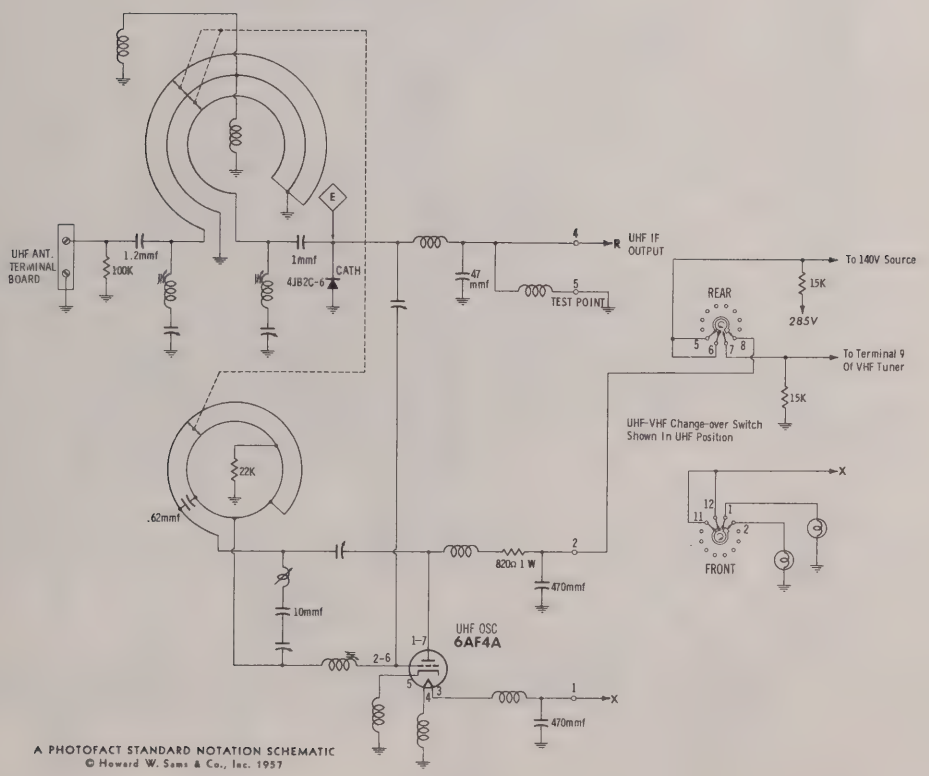
| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 8. | Fig. 3 | Thru matching network (Fig. 3) to antenna terminals. | 213MC (10MC Swp) | 211.25MC 45.75MC | 13 | Vert. Amp. thru 10K to point C. Low side to chassis. | A12 | Adjust so that video RF and video IF markers coincide on response curve. |
| 9. | " | " | 207MC (10MC Swp) | 205.25MC 45.75MC | 12 | " | A13 | Adjust position of loops so that video RF and video IF markers coincide on response curve. |
| | | | 201MC (10MC Swp) | 199.25MC 45.75MC | 11 | | A14 | |
| | | | 295MC (10MC Swp) | 193.25MC 45.75MC | 10 | | A15 | |
| | | | 289MC (10MC Swp) | 187.25MC 45.75MC | 9 | | A16 | |
| | | | 283MC (10MC Swp) | 181.25MC 45.75MC | 8 | | A17 | |
| | | | 277MC (10MC Swp) | 175.25MC 45.75MC | 7 | | A18 | |
| 10. | " | " | 85MC (10MC Swp) | 83.25MC 45.75MC | 6 | | A19 | (Same as step 8.) |
| 11. | " | " | 79MC (10MC Swp) | 77.25MC 45.75MC | 5 | | A20 | Adjust (compress or expand coil turns) so that video RF and video IF markers coincide on response curve. |
| | | | 69MC (10MC Swp) | 67.25MC 45.75MC | 4 | | A21 | |
| | | | 63MC (10MC Swp) | 61.25MC 45.75MC | 3 | | A22 | |
| | | | 57MC (10MC Swp) | 55.25MC 45.75MC | 2 | | A23 | |

RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

UHF TUNER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

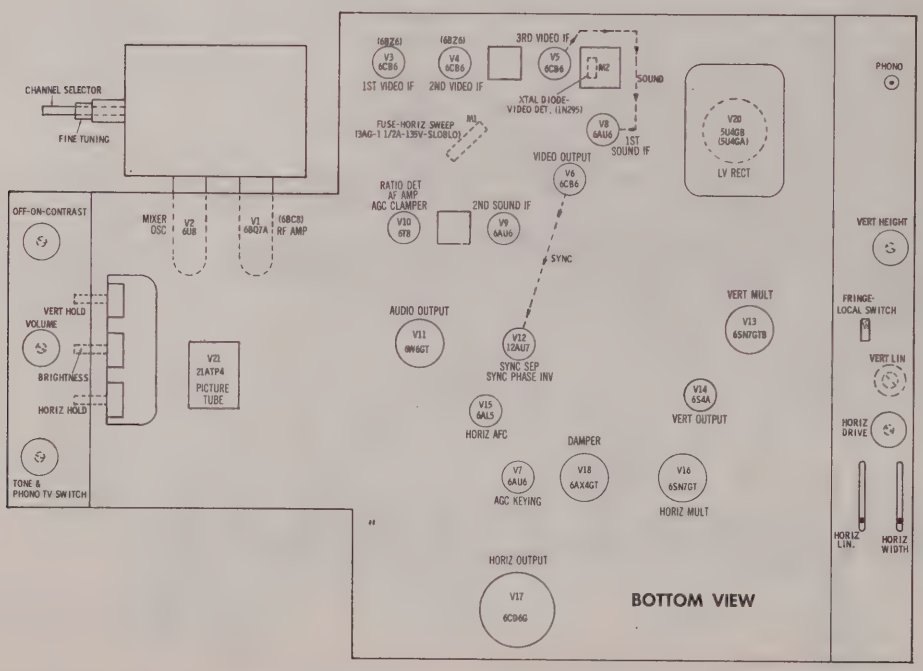



## ALTERNATE UHF TUNER SCHEMATIC

# RESISTANCE MEASUREMENTS

| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V1 | 6BQ7A | †1700Ω | †240K | INF | 0Ω | .1Ω | INF | 930K | 0Ω | 0Ω |
| V2 | 6U8 | ■150Ω | 360K | ■68K | 0Ω | .1Ω | †4000Ω | 0Ω | 0Ω | 22K |
| V3 | 6CB6 | 65K | 47Ω | .1Ω | 0Ω | ■ 470Ω | ■ 470Ω | 0Ω | | |
| V4 | 6CB6 | 57K | 56Ω | .1Ω | 0Ω | ■ 470Ω | ■ 470Ω | 0Ω | | |
| V5 | 6CB6 | .1Ω | 220Ω | .1Ω | 0Ω | ■ 470Ω | ■ 470Ω | 0Ω | | |
| V6 | 6CB6 | 5100Ω | ●10Ω | .1Ω | 0Ω | †10K | †30K | 0Ω | | |
| V7 | 6AU6 | †55K | †4300Ω | †4300Ω | †4300Ω | 250K | ‡3000Ω | †4300Ω | | |
| V8 | 6AU6 | 470K | 0Ω | .1Ω | 0Ω | ■1000Ω | ■1000Ω | 0Ω | | |
| V9 | 6AU6 | 270K | 0Ω | .1Ω | 0Ω | ■1000Ω | ■ 47K | 0Ω | | |
| V10 | 6T8 | INF | 22K | INF | .1Ω | 0Ω | 440K | 0Ω | 4.7Meg | †470K |
| V11 | 6W6GT | TP | 0Ω | †530Ω | †3600Ω | 500K | TP | .1Ω | ¶ | |
| V12 | 12AU7 | †450K | 5Meg | 0Ω | 0Ω | 0Ω | †3400Ω | 22K | 3000Ω | .1Ω |
| V13 | 6SN7GTB | 470K | ‡270K | 0Ω | ●2Meg | ‡1.7Meg | 0Ω | .1Ω | 0Ω | |
| V14 | 6S4A | NC | ●2000Ω | ● 1.7Meg | .1Ω | 0Ω | ●1.7Meg | NC | NC | |
| V15 | 6AL5 | 5.2Meg | 5.2Meg | .1Ω | 0Ω | 27K | 0Ω | 27K | | |
| V16 | 6SN7GT | ● 90K | †200K | 1500Ω | 4.7Meg | †6800Ω | 1500Ω | .1Ω | 0Ω | |
| V17 | 6CD6G | NC | 0Ω | 0Ω | TP | 470K | TP | .1Ω | †18K | TOP CAP ‡16Ω |
| V18 | 6AX4GT | TP | NC | 4.5Meg | NC | †65Ω | TP | .1Ω | 0Ω | |
| V19 | 1B3GT | | PINS | 1 THRU 8 | HAVE | INF | RESISTANCE | | | TOP CAP ‡483Ω |
| V20 | 5U4GB | NC | ¶ | NC | 19Ω | NC | 16Ω | NC | ¶ | |
| V21 | 21ATP4 | .1Ω | 230K | PIN 6 ‡3000Ω | PIN 10 ‡3000Ω | PIN 11 240K | PIN 12 0Ω | | | |

■ MEASURED FROM 140V SOURCE.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM PIN 2 OF V20.
‡ MEASURED FROM PIN 3 OF V18.
NC NO CONNECTION
TP TIE POINT




# TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO




CHASSIS TOP VIEW

MAGNAVOX CHASSIS CMUA458BA, CB,
CMUD447CB, CTA458BA, CB, CTD447CB

# PARTS LIST AND DESCRIPTIONS

## TUBES ( GENERAL ELECTRIC, SYLVANIA)

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | RF Amplifier | 6BQ7A | Note 1 |
| V2 | Mixer-Oscillator | 6U8 | |
| V3 | 1st Video IF Amplifier | 6CB6 | Note 2 |
| V4 | 2nd Video IF Amplifier | 6CB6 | Note 2 |
| V5 | 3rd Video IF Amplifier | 6CB6 | |
| V6 | Video Output | 6CB6 | |
| V7 | Sync Separ. Clamp | 6CM6 | |
| V8 | 1st Sound IF Amplifier | 6AU6 | |
| V9 | 2nd Sound IF Amplifier | 6AU6 | |
| V10 | Ratio Det. - AF Amp. - Audio Output | 6T8 | |

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V11 | Audio Output | 6V6GT | |
| V12 | Sync Sep. - Sync Phase Inv | 12AU7 | |
| V13 | Vert. Mult. | 6SN7GTB | |
| V14 | Vert. Output | 6S4A | |
| V15 | Horiz. AFC | 6AL5 | |
| V16 | Horiz. Mult. | 6SN7GT | |
| V17 | Horiz. Output | 6CM6 | |
| V18 | Damper | 6AX4GT | |
| V19 | HV Rectifier | 1N3GT | |
| V20 | LV Rectifier | 5U4GB | |

Note 1 Some versions may use a 6BC8 in this application.
Note 2. Some versions may use a 6BZ8 in this application

## PICTURE TUBE

| ITEM No. | REPLACEMENT DATA | | | |
|---|---|---|---|---|
| | MAGNAVOX PART No. | GENERAL ELECTRIC PART No. | SYLVANIA PART No. | NOTES |
| V21 | 24AP4 | 24AP4 | 24AP4 | |
| | 24AP4A | 24AP4A | 24AP4A | 1 Aluminized |
| | | | 24AP4A | 2 Silver screen 85 |
| | | | 24AP4A | |
| | | | 24AP4 | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING CAP | RATING VOLT | REPLACEMENT DATA MAGNAVOX PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 40 | 350 | 25021-34 | RE1008 | CG350 | FP375 | | Q-025 | TVL-4631 |
| B | 40 | 350 | | | BH505 | TC-62 | | MT-0350 | |
| C | 50 | 50 | | | | | | | |
| D | 70 | 350 | | | | | | | |
| C2A | 80 | 350 | 27021-55 | AFH3 (4-470 | | FP369 | | T-802 | R2348 * |
| B | 100 | 200 | | | | TC-90 | | MT-4830 | |
| C | 150 | 350 | | | | | | | |
| C3 | 4 | 50 | 27027-0 | SRE50V5 | BBR4 50 | TC30 | TD 4-50 | MMT-0505 | TVA 1305 |
| C4 | 20 | 350 | 27027-20 | PR350V20 | BR2035 | TC65 | TD-20-350 | FM-4520 | TVA-4608 |
| C5 | 20 | 50 | 27027-23 | PR50V2 | BHR2-50 | TC202 | TD-2-50 | MT-0420 | TVA-205 |
| C6 | 30 | 350 | 27027-28 | Note 1 NP-PR350 | BR2035 | TC65 | | MT-4520 | R2327 * |
| | | | | | VN250 | VN2035 | | MT-4520 | |

Note 1. Non-polarized unit
† Connect negative leads together.
* Non-catalog item

## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

| ITEM No. | RATING CAP | RATING VOLT | REPLACEMENT DATA MAGNAVOX PART No. | AEROVOX PART No. | CENTRALAB PART No. | ERIE PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| C7 | 15 | | 25207-44 | SI 15 | DM-150 | CG-15 | UC-5415 | | 5GA-Q15 | |
| C8 | 15 | | 25207-44 | SI 15 | DM-150 | CG-15 | UC-5415 | | 5GA-Q15 | |
| C9 | 39 | | 25075-20 | NPO-SI 39 | TCN-39 | C10QB9U | TCT-39 | | | N750 |
| C10 | 39 | | 25075-20 | NPO-SI 39 | TCN-39 | C10QB9U | TCT-39 | | | N750 |
| C11 | 39 | | 25080-9 | | | | | | | |
| C12 | 10 | | 25022-147 | NPO-SI 10 | DD-100 | L10QB | ED-10 | UC-541 | 5GA-Q | |
| C13 | 470 | | 25075-8 | NPO-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C14 | 470 | | 25078-8 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C15 | 68 | | 25026-4 | | | | | | | |
| C16 | 1500 | | 25075-10 | BPD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5215 | 5HK-D15 | |
| C17 | 56 | | 25022-131 | | TCZ-4ZRT | | TCO-5 | | | |
| C18 | 1.5 | | | NPO-SI 1 | TCZ-1 | | TCO-1 | | 5TCCB-V1 | Note 3 |
| C19 | 15 | | 25207-5 | NPO-SI 15 | TCZ-15 | C10QB5C | TCO-15 | | 5TCC-Q15 | NPO |
| C20 | 1.5 | | 25075-32 | NPO-SI 1.5 | TCZ-1R5 | C10QV5C | TCO-1.5 | | 5TCCB-V01 | |
| C21 | 470 | | 25075-8 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C22 | 470 | | 25075-8 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C23 | 100 | | | | TCA-100 | | TCB-100 | | | Note 3 |
| C24 | 62 | | 25068-136 | NT50-SI 10 | TCN-10 | C10QU | TCT-10 | NT-541 | BTCU-Q | N750 |
| C25 | 15 | | 25068-137 | | | | | | | N1500 |
| C26 | 470 | | 25075-8 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C27 | 470 | | 25075-8 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C28 | 1500 | | 25075-10 | BPD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5215 | 5HK-D15 | |
| C29 | 68 | | 25219-6043 | 1469-000268 | | 1R5T68 | | MS-468 | | |
| C30 | 600 | | 25028-14 | BPD-0068 | DD-601 | L10T6 | ED-680 | UC-5368 | 5GA-T68 | Note 4 |
| C5, 680 | | | 25028-14 | BPD-0068 | DD-681 | BYA10T68 | ED-680 | UC-5368 | 5GA-T68 | Note 4 |
| C32 | 470 | | 25028-41 | | | L10T63 | | | | |
| C33 | 1000 | | 25075-14 | BPD-001 | DD-102 | BYA10D1 | ED-1000 | DC512 | 5HK-D1 | |
| C34 | 680 | | 25028-4 | BPD-0068 | DD-681 | BYA10T68 | ED-680 | UC-5368 | 5GA-T68 | Note 5 |
| C35 | 680 | | 25028-4 | BPD-0068 | DD-681 | BYA10T68 | ED-680 | UC-5368 | 5GA-T68 | Note 6 |
| C36 | 5000 | | 25075-1 | BPD-001 | DD-502 | BYA10D5 | ED-5000 | DC5215 | 5HK-D5 | |
| C37 | 62 | 200 | 25022-15 | P28BN-33 | | L10ZB33 | | GEM-3023 | 5TM-P22 | |
| C38 | 0033 | 600 | 25020-4 | BPD-0033 | DE-333 | BYA10D33 | GEM-6223 | | 5TM-S33 | |
| C39 | 15 | | 25022-123 | NPO-SI 4.7 | C0Y47C | | TCZ-4R7 | Z7-5547 | 5TCCB-V47 | |
| C40 | 68 | | 25028-7 | BPD-0006S | DD-680 | L10QB | ED-68 | UC-5468 | 5GA-Q68 | |
| C41 | 68 | | 25028-7 | NT50-SI 68 | C10QB6U | | TCT-68 | | 5TCCB-Q68 | N750 |
| C42 | 68 | | 25028-7 | BPD-0006S | DD-680 | L10QB | ED-68 | UC-5468 | 5GA-Q68 | |
| C43 | 1500 | | 25028-18 | BPD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5215 | 5HK-D15 | |
| C44 | 10 | | 25207-3 | DE-10 | DM-100 | L10QB | GP-10 | UC-540 | 5GA-Q | |
| C45 | 5000 | | 25075-1 | BPD-005 | DD-502 | BYA10D5 | ED-5000 | DC525 | 5HK-D5 | |
| C46 | 5000 | | 25075-1 | BPD-005 | DD-502 | BYA10D5 | ED-5000 | DC525 | 5HK-D5 | |
| C47 | 1000 | | 25075-14 | BPD-01 | DD-102 | BYA10D1 | ED-1000 | DC512 | 5HK-D1 | |
| C48 | 68 | | 25028-4 | BPD-0068 | DD-681 | BYA10T68 | ED-680 | UC-5368 | 5GA-T68 | |
| C49 | 470 | | 25088-117 | | | | | | | N1500 |
| C50 | .0022 | 400 | 25022-7 | BPD-0022 | DE-232 | CUB4D22 | ED-0022 | GEM-4322 | 4TM-D24 | |
| C51 | 01 | 400 | 25021-7 | BPD-01 | DD-103 | CUB4EI | ED-01 | GEM-411 | 4TM-S1 | |
| C52 | 01 | 400 | 25021-7 | BPD-01 | DD-103 | CUB4EI | ED-01 | GEM-411 | 4TM-S1 | |
| C53 | 0047 | 600 | 25021-5 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C54 | 470 | | 25028-6 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C55 | 01 | 400 | 25020-1 | BPD-01 | DD-103 | BYA4EI | ED-01 | GEM-411 | 4TM-S1 | |
| C56 | .0047 | 600 | 25020-5 | BPD-0047 | DD-473 | BYA4D47 | ED-0047 | GEM-4347 | 4TM-D47 | |
| C57 | 1000 | | 25028-8 | BPD-001 | DD-102 | BYA4D1 | ED-1000 | DC512 | 5HK-D1 | |
| C58 | .22 | 200 | 25022-15 | P28BN-33 | | CUB2P33 | | GEM-3023 | 2TM-P22 | |
| C59 | 5000 | | 25075-1 | BPD-005 | DD-502 | BYA10D5 | ED-5000 | DC512 | 5HK-D5 | |
| C60 | 1000 | | 25075-14 | BPD-001 | DD-102 | BYA10D1 | ED-1000 | DC512 | 5HK-D1 | |
| C61 | 1500 | | 25075-10 | BPD-0015 | DD-152 | BYA10D15 | ED-1500 | DC5215 | 5HK-D15 | |
| C62 | 470 | | 25075-8 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C63 | 470 | | 25075-8 | BPD-0047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C64 | 68 | | 25028-4 | BPD-0068 | DD-681 | BYA10T68 | ED-680 | UC-5368 | 5GA-T68 | |
| C65 | .0047 | 600 | 25020-5 | BPD-0047 | DD-473 | BYA4D47 | ED-0047 | GEM-4347 | 4TM-D47 | |
| C66 | 1000 | | 25028-8 | BPD-001 | DD-102 | BYA4D1 | ED-1000 | DC512 | 5HK-D1 | |
| C67 | .22 | 200 | 25022-15 | P28BN-33 | | CUB2P33 | | GEM-3023 | 2TM-P22 | |
| C68 | 5000 | | 25075-1 | BPD-005 | DD-502 | BYA10D5 | ED-5000 | DC512 | 5HK-D5 | |
| C69 | 1000 | | 25075-14 | BPD-001 | DD-102 | BYA10D1 | ED-1000 | DC512 | 5HK-D1 | |
| C70 | 150 | | 25059-99 | 1468-00015 | | 2SR15 | | | MS-315 | |
| C71 | .0022 | 400 | 25022-7 | BPD-0022 | DE-232 | CUB4D22 | ED-0022 | GEM-4322 | 4TM-D22 | |
| C83 | 040 | | 25021-13 | P48BN-1 | | DF-104 | CUB4EI | GEM-401 | 4TM-P1 | |
| C84 | .0047 | 400 | 25021-5 | BPD-0047 | DD-473 | CUB4D47 | ED-0047 | GEM-4347 | 4TM-D47 | |
| C85 | 1000 | | 25028-8 | BPD-001 | DD-102 | BYA4D1 | ED-1000 | DC512 | 5HK-D1 | |
| C86 | 2700 | | 25160-1069 | | | 1R5D27 | | | MS-327 | |
| C87 | 047 | 400 | 25022-7 | BPD-08 | DF-503 | CUB4947 | | GEM-447 | 4TM-S47 | |

## PARTS LIST AND DESCRIPTIONS

### CAPACITORS (cont)

| ITEM No. | RATING CAP | RATING VOLT | REPLACEMENT DATA MAGNAVOX PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| C88 | 047 | 400 | 25021-13 | P48BN-1 | | DF-104 | CUB4PI | GEM-401 | 4TM-P1 | |
| C89 | 047 | 400 | 25021-13 | P48BN-1 | | BPD-05 | DF-503 | GEM-4147 | 4TM-S47 | |
| C70 | 1000 | | 25028-8 | BPD-001 | | DD-102 | BYA4D1 | ED-1000 | DC512 | 5HK-D1 |
| C71 | 1000 | | 25028-8 | BPD-001 | | DD-102 | BYA4D1 | ED-1000 | DC521 | 5HK-D1 |
| C72 | 05 | 400 | 25021-1 | BPD-05 | | DF-503 | CUB4EI | | GEM-2115 | 4TM-S5 |
| C73 | 0047 | 400 | 25021-4 | BPD-0047 | | DD-472 | CUB4D47 | | GEM-4247 | 4TM-D47 |
| C74 | 047 | 400 | 25021-5 | BPD-05 | | DF-503 | CUB4EI | | GEM-4147 | 4TM-S47 |
| C75 | 360 | | 25015-1060 | 1469-00036 | | | 3R5T36 | | | MS-336 |
| C76 | 1000 | | 25028-8 | BPD-001 | | DD-103 | BYA4D1 | ED-1000 | DC521 | 5HK-D1 |
| C77 | 3900 | | 25016-3041 | | | | 3R5T39 | | | MS-339 |
| C78 | 1000 | | 25028-8 | BPD-001 | | DD-103 | BYA4D1 | ED-1000 | DC521 | 5HK-D1 |
| C79 | 360 | | 25015-1060 | 1469-00036 | | | 3R5T36 | | | MS-336 |
| C80 | 0047 | 400 | 25021-5 | BPD-0047 | | DD-473 | CUB5D47 | ED-0047 | GEM-4347 | 4TM-D47 |
| C81 | | | 25021-3 | P48BN-22 | | | CUB4P22 | | GEM-4022 | 4TM-P22 |
| C82 | 047 | 400 | 25021-11 | BPD-05 | | DF-503 | CUB4EI | | GEM-4147 | 4TM-S47 |
| C83 | 047 | 400 | 25021-11 | BPD-05 | | DF-503 | CUB4947 | | GEM-4147 | 4TM-S47 |
| C84 | 68 | 2000 | | RVD-30-68 | | DD30-680 | BYA5RQR8 | HDS-68 | DC30468 | 5GA-Q68 |
| C85 | 1 | 600 | 25021-13 | P48BN-1 | | DF-104 | CUB4PI | | GEM-501 | 5TM-P1 |
| C86 | 1 | 400 | 25021-13 | P48BN-1 | | DF-104 | CUB4PI | | GEM-401 | 4TM-P1 |
| C87 | 10000 | 1000 | 25023-2 | P38BN-G | | DD-103 | BYA10S1 | | GEM-1011 | 10TM-S1 |
| C88 | 10000 | 1000 | 25023-2 | P38BN-G | | DD-103 | BYA10S1 | | GEM-1011 | 10TM-S1 |
| C89 | 680 | | | BPD-0068 | | DD-0680 | BYA10D68 | ED-680 | UC-5368 | 5GA-T68 Note 7 |

Note 4 Some versions may use a 1 8MMF in this application.
Note 5 Some versions may use a 470MMF in this application.
Note 6 Some versions may use a 560MMF in this application.
Note 5. Some versions may use an 800MMF in this application.
Note 6 Some versions may use a 1500MMF in this application.
Note 7 Not used in some versions

## CONTROLS

| ITEM No. | RATING RESIST ANCE | RATING WATTS | REPLACEMENT DATA MAGNAVOX PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| R1A | 1Meg | ½ | 230136-25 | B-70 | A47-1Meg-2 | Q13-13T | U53 | Volume |
| B | Shaft | | | Not Req. | FS-3 | Not Req. | Not Req. | |
| R2A | 750Ω | ½ | 230136-56 | A8-618 | A47-750-S | Q7-105 | U3 | Contrast |
| B | Shaft | | | AK-3 | FS-3 | Not Req. | Not Req. | |
| C | Switch | | | KB-1 | SWS-13 | T6-1 | U3-38 | |
| R3A | 500K | 1 | 230137-3 | | | | | Tone |
| B | Switch | | | | | | | Phono-TV |
| R4A | 1.25Meg | ½ | 230139-5 | AB-743 | A47-1.5Meg-S | Q1-138 | U156 | Vert. Hold |
| B | Shaft | | | AK-3* | FS-3* | VQ* | Not Req. * | |
| R5A | 100K | ½ | 230139-13 | AB-40 | A47-100K-S | Q1-128 | U41 | Brightness |
| B | Shaft | | | AK-3* | FS-3* | VQ* | Not Req. * | |
| R6A | 3.5K | ½ | 230139-6 | AB-38 | A47-35K-S | Q1-130 | U39 | Horiz. Hold |
| B | Shaft | | | AK-3* | FS-3* | VQ* | Not Req. * | |
| R7A | 7.5Meg | ½ | 230146-3 | AB-758 | A47-1.5Meg-S | Q41-239 | U156 | Vert. Height |
| B | Shaft | | | AK-1 | FKS-1/4 | RQ | Not Req. | |
| R8 | 300Ω | 2 | 230139-3 | | | | | Vert. Lin. (Wire-wound) |
| R8A | 35K | 2 | 230148-1 | AB-36 | A47-35K-S | Q11-130 | U39 | Horiz. Drive |
| B | Shaft | | | AK-1 | FKS-1/4 | RQ | Not Req. | |

* File replacement shaft to be double flat.

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING OHMS | RATING WATT | REPLACEMENT DATA MAGNAVOX PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|
| R10 | 100K | | 230104-98 | BTS-100K | |
| R11 | 470K | | 230104-94 | BTS-470K | |
| R12 | 470K | | 230104-94 | BTS-470K | |
| R13 | 820Ω | | 230104-73 | BTS-820 | |
| R14 | 680Ω | | 230104-60 | BTS-680 | Note 1 |
| R15 | 680Ω | | 230104-60 | BTS-680 | |
| R16 | 33K | | 230104-82 | BTS-33K | |
| R17 | 330K | | 230104-92 | BTS-330K | |
| R18 | 33000 | | 230104-82 | BTS-33K | |
| R19 | 470K | | 230104-94 | BTS-470K | |
| R20 | 68K | | 230104-84 | BTS-68K | |
| R21 | 22K | | 230104-78 | BTS-22K | |
| R22 | 150Ω | | 230104-52 | BTS-150 | |
| R23 | 1200 | 1 | 230104-53 | BTS-1200 | |
| R24 | 470K | | 230104-94 | BTS-470K | |
| R25 | 10Meg ±5% | | 230104-555 | BTS-10Meg-5% | |
| R26 | 330K ±% | | 230104-319 | | |
| R27 | 33000 ±% | | | BTS-3300 5% | Note 2 |
| R28 | 470Ω | | 230104-58 | BTS-470 | |
| R29 | 47Ω | | 230104-46 | BTS-47 | |
| R30 | 100Ω | | | | |
| R31 | 12K ±% | | | | Note 3 |
| R32 | 4700 | | 230104-68 | BTS-470 | |
| R33 | 560Ω | | 230104-47 | BTS-56 | |
| R34 | 56K ±% | | 230104-101 | BTS-56K ±% | |
| R35 | 100K ±% | | 230104-207 | BTS-100K ±% | |
| R36 | 33000 ±% | | | BTS-3300 5% | Note 2 |
| R37 | 4700 | | 230104-59 | BTS-470 | |
| R38 | 330Ω | | | BTS-330 | Note 4 |
| R39 | 4700 | | 230104-175 | BTS-470 | |
| R40 | 47000 ±% | | 230094-175 | | |
| R41 | 470Ω | | 230104-58 | | |
| R42 | 330K | | 230104-92 | BTS-330K | |
| R43 | 470K | | 230104-94 | BTS-470K | |
| R44 | 27K | 1 | 230105-79 | BTA-27K | |
| R45 | 47K | | 230104-63 | BTS-47K | |
| R46 | 33000 ±% | | 230094-175 | | |
| R47 | 2300Ω | | 230105-68 | BTA-2300 | |
| R48 | 100K | | 230104-86 | BTS-100K | |
| R49 | 330K | | 230104-92 | BTS-330K | |
| R50 | 470K | | 230104-94 | BTS-470K | |
| R51 | 10000 | | 230104-93 | BTS-1000 | |
| R52 | 270K | | 230104-91 | BTS-270K | |
| R53 | 33K | | 230104-82 | BTS-33K | |
| R54 | 47K | | 230104-82 | BTS-47K | |
| R55 | 1000Ω | | 230104-53 | BTS-1000 | |
| R56 | 47Ω | | 230104-46 | BTS-47 | |
| R57 | 22K | | 230104-78 | BTS-22K | |

| ITEM No. | RATING OHMS | RATING WATT | REPLACEMENT DATA MAGNAVOX PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|
| R58 | 33K | | 230104-80 | BTS-33K | |
| R59 | 4.7Meg | | 230104-108 | BTS-4.7Meg | |
| R60 | 470K | | 230104-94 | BTS-470K | |
| R61 | 1.5Meg | | 230104-106 | BTS-1.5Meg | |
| R62 | 1.2Meg ±% | | 230094-233 | BTS-1.2Meg ±% | |
| R63 | 1.5Meg ±% | | 230094-231 | BTS-1.5Meg ±% | |
| R64 | 3300Ω | | 230104-68 | BTS-3300 | |
| R65 | 270Ω | 2 | 230106-55 | BTB-270 | |
| R66 | 10K | | 230104-74 | BTS-10K | |
| R67 | 4.7Meg | | 230104-108 | BTS-4.7Meg | |
| R68 | 470K | | 230104-94 | BTS-470K | |
| R69 | 330K | | 230104-92 | BTS-330K | |
| R70 | 180K | | 230104-88 | BTS-180K | |
| R71 | 33K | | 230104-80 | BTS-33K | |
| R72 | 1Meg | | 230104-98 | BTS-1Meg | |
| R73 | 33K | | 230104-80 | BTS-33K | |
| R74 | 34000 ±% | | 230094-168 | BTS-2460 5% | |
| R75 | 33000 ±% | | 230094-169 | BTS-2760 5% | |
| R76 | 330Ω | | 230104-58 | BTS-330 | |
| R77 | 470K | | 230104-94 | BTS-470K | |
| R78 | 470K | 1 | 230105-91 | BTA-270K | |
| R79 | 1.2Meg ±% | | 230094-237 | BTS-1.2Meg ±% | |
| R80 | 15K ±% | | 230094-188 | BTS-15K ±% | |
| R81 | 1.5Meg | 1 | 230105-99 | BTA-1.5Meg | |
| R82 | 33K | | 230104-80 | BTS-33K | |
| R83 | 33000 | | 230130-1 | | |
| R84 | 1000Ω | | 230104-83 | BTS-1000 | |
| R85 | 120Ω | | | | |
| R86 | 2200 | | | | |
| R87 | 50000 5% | 5 | 240071-10 | 1 3/4A-3300 | |
| R88 | 82K | | 230094-45 | | |
| R89 | 100K | | 230104-86 | BTS-100K | |
| R90 | 470K | | 230104-94 | BTS-470K | |
| R91 | 4.7Meg | | 230104-108 | | |
| R92 | 3300Ω | | 230104-73 | | |
| R93 | 1500Ω 5% | | 230094-183 | BTS-1500 5% | |
| R94 | 82K | | 230104-84 | | |
| R95 | 3300K 5% | | 230094-214 | | |
| R96 | 1000Ω | | 230104-93 | | |
| R97 | 13K | | 230104-75 | BTS-12K | |
| R98 | 470K | | 230104-94 | BTS-470K | |
| R99 | 470K | | 230104-94 | BTS-470K | |
| R100 | 15K ±% | 4 | 240072-1 | | |
| R101 | 47000 | 3 | 230106-70 | BTB-4700 | |
| R102 | 6800Ω | | 230104-72 | | |
| R103 | 27K | 1 | 230105-79 | BTA-27K | |
| R104 | 4300Ω | 4 | 240071-1 | | |
| R105 | 120K | | 230101-1 | BTS-120K | |

Note 1: A 470Ω resistor used in some versions. (Part #230094-58)
Note 2: A 10K 5% resistor used in some versions. (Part #230094-98)
Note 3: A 15K 5% resistor used in some versions. (Part #230094-187)
Note 4: A 1200 resistor used in some versions. (Part #23010-51)
Note 5: This is a temperature compensating resistor, approximately 950K cold.

## TRANSFORMER (POWER)

| ITEM No. | RATING PRI | RATING SEC 1 | RATING SEC 2 | RATING SEC 3 | REPLACEMENT DATA MAGNAVOX PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
|---|---|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC & 1.8A | 600VCT & 430A | 5V & 3A | 6.3V & 3A<br>SEC 4<br>6.3V @1.2A | 3900079-1 | | P-2838 ① | P-8333 ② | 28S34 ③ | |

Parallel and phase 6.3V @ 3.8A fil. windings, tape 6.3V @ 3.3A fil. winding.
Drill new mounting holes, tape center tap on 5V fil. winding.
Parallel and phase 6.5V @ 1.2A and 6.3V @ 10.3A fil. winding.

## TRANSFORMERS (SWEEP CIRCUITS)

| ITEM No. | USE | REPLACEMENT DATA MAGNAVOX PART No. | Halldorson PART No. | Merit PART No. | RCA TYPE No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
|---|---|---|---|---|---|---|---|---|
| T2 | Horiz Output Trans | 230532-1 | | | | HG279 | | |
| T3 | Vert. Output Trans | 230294-1 | Z1806 | A-3039 | Z497T1 | A-8781 | 26S54 | A-104X |
| T4A | Yoke (90° Horiz. (2MH) | 230617-1 | DF807 ② | MDF-942 ② | 2350D1 ② | DY-18A ② | V-26 ② | Y-42 ② |
| B | Vert. (45MH) | 230617-2 ① | DF807 ② | MDF 942 ② | 2350D1 ② | DY-18A ② | V-26 ② | Y-42 ② |
| T6 | Linearity Coil (1.8 - 4.2 MH) | 230631 | RF802 ② | MWC-5 ③ | 207R1 ③ | 20H5A ③ | WC-6 ③ | WC-18 ④ |
| T5A | Width (Series Coil 35-2 3MH; (Parallel Coil 4.4-29 MH) | 230585-1 | | MWC-10 ④ | | | | WC-24 ⑤ |
| B | | | | | | | | |

† Alternate part number.
① Use original yoke damping network.
② Drill new mounting hole.
③ Use original core and mounting bracket.
④ Use original mounting bracket.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE PRI | IMPEDANCE SEC | REPLACEMENT DATA MAGNAVOX PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T7 | 3600Ω | 3-4Ω | 230068-1 | 21S10 | A-3018 | A-3949 | 26S50 | S-4X ① | ① Drill one new mounting hole. |

## COILS (RF-IF)

| ITEM No. | USE | MAGNAVOX PART No. | NOTES |
|---|---|---|---|
| L1 | Ant. Trans. | 230490-3 | |
| L2 | RF Choke | 230601-8 | |
| L3 | UHF IF Input Coil | 230602-1 | |

| ITEM No. | USE | MAGNAVOX PART No. | NOTES |
|---|---|---|---|
| L4 | RF Choke Mixer Plate Coil | 230601-9 | |
| L5 | | 230603-1 | |

| ITEM No. | USE | MAGNAVOX PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | NOTES |
|---|---|---|---|---|---|---|
| L6 | 1st. Video IF | 230540-1 | | | | |
| L7 | 2nd. Video IF | 230581-1 | 17-4533 | TV-130 | 6219 | |
| L8 | 3rd. Video IF | 230582-1 | 17-5005 * | TV-132 * | 6233 * | Includes 47.25MC Trap |
| L9 | Shunt Peaking Coil | 230623-7 | 19-4400 a | | 6136 a | 400 Microhenries, wound on 100K resistor |
| L10 | Series Peaking Coil | 230643-30 | 19-3300 a | TV-135 a | 6155 a | 330 Microhenries, wound on 1.5Meg resistor |
| L11 | Shunt Peaking Coil | 230643-31 | 19-3300 a | TV-131 a | 6135 a | 340 Microhenries, wound on 100K resistor |
| L12 | Shunt Peaking Coil | 230643-39 | 19-3250 a | TV-135 a | 6161 a | 340 Microhenries, wound on 10K resistor |
| L13 | 1st. Sound IF | 230584-1 | 17-3400 | TV-151 | 1469 | |
| L14 | 2nd. Sound IF | 230584-1 | 17-3400 | TV-151 | 1469 | |
| L15 | Ratio Det. | 230585-1 | 17-3497 | TV-116 | 4806 | Tertiary winding - .6Ω |
| L16 | RF Choke | 230630-1 | 19-1002 | | 4806 | 2.5 Microhenries |
| L17 | IF Trap Coil | 230630-2 | | | | |
| L18 | IF Trap Coil | 230630-1 | | | | |

* Use adaptor plate.
a Parallel with 100K resistor.
b Parallel with 10K resistor.
= Parallel with 1 5Meg resistor

## TRANSFORMER (HORIZ. OSC.)

| ITEM No. | USE | REPLACEMENT DATA MAGNAVOX PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | RCA TYPE No. | Rem PART No. | Thordarson PART No. | Triad PART No. |
|---|---|---|---|---|---|---|---|---|---|
| L19 | DC RES. PRI | 230570-1 | | | | | | | |
| | SEC | 230570-2 | | | | | | | |
| | | | | | | | | 28S-7 * | |

* Drill new mounting hole.

## FILTER CHOKE

| ITEM No. | RATINGS TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE (60 CURRENT 1000 Cy.) | REPLACEMENT DATA MAGNAVOX PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
|---|---|---|---|---|---|---|---|---|---|
| L20 | 250A | 35Ω | 7.5 HY | 230068-2 | C 5041 ① | C-3994 | C-8328 ① | 28C41 | C-34X |

① Drill one new mounting hole.

## COMPONENT COMBINATIONS

| ITEM No. | USE | DESCRIPTION | MAGNAVOX PART No. | REPLACEMENT DATA |
|---|---|---|---|---|
| K1 | Vert. Integrator | 3000MMF, 5000MMF, 5000MMF, 22K, 6300Ω, 6300Ω | 230186-1 | Aerovox PA-410<br>Centralab PC-100<br>Cornell-Dubilier 15TM1<br>Erie 1605-01<br>Sprague V-1 |

MAGNAVOX CHASSIS CMUA458BA, CB, CMUD447CB, CTA458BA, CB, CTD447CB

# PARTS LIST AND DESCRIPTIONS (Continued)

## FUSES

| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | MAGNAVOX PART No. | | LITTELFUSE PART No. | | BUSS PART No. | |
| | | | FUSE | HOLDER | FUSE | HOLDER | FUSE | HOLDER |
| M1 | 3AG | .15A * 125V S/B | | | 313.150 (3AG .15A S/B 125V) | 357001 | MDL 15/100 | 4405 |

* Some versions may use a .2A in this application( Part #180157-23).

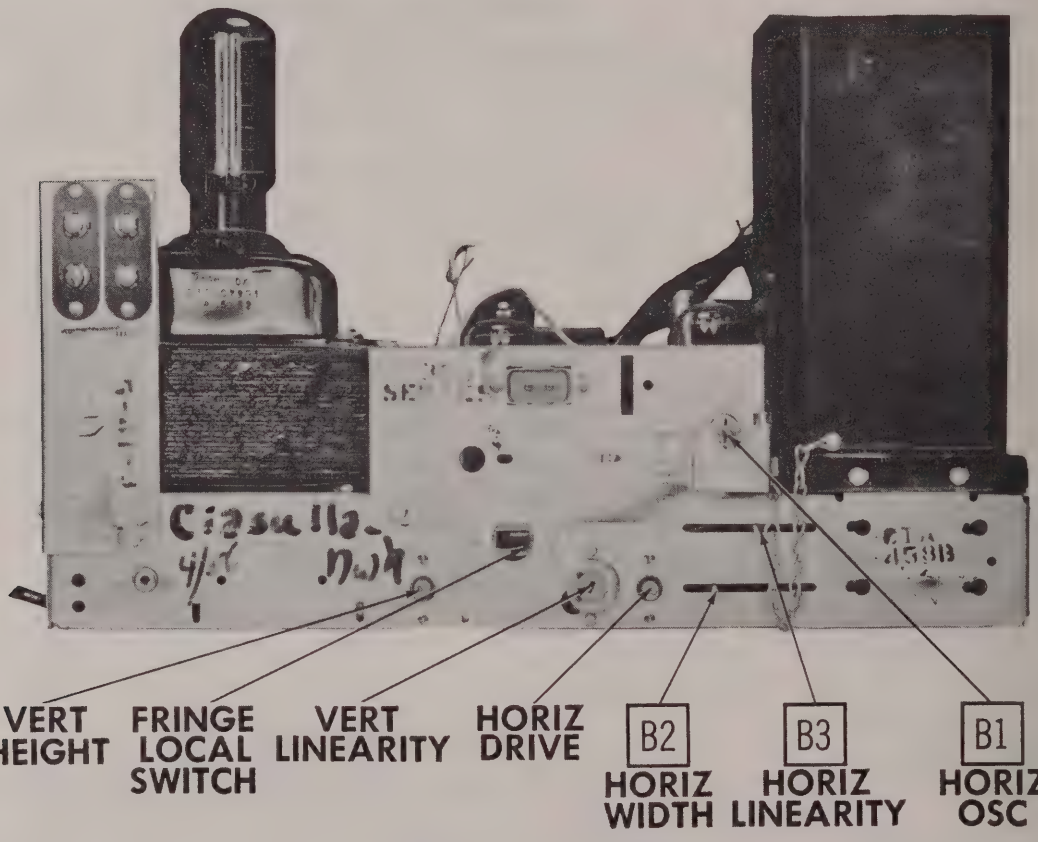
## CRYSTAL DIODES

| ITEM No. | ORIG. TYPE | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|
| | | MAGNAVOX PART No. | SYLVANIA PART No. | |
| M2 | 1N295 * | | 1N60 | Video Detector (Pigtail) |

* A 1N64 may be used in some versions.

## MISCELLANEOUS

| ITEM No. | PART NAME | MAGNAVOX PART No. | NOTES |
|---|---|---|---|
| M3 | Dial Light | | #44 Type |
| M4 | Tuner | 700458-3 | VHF |
| | Tuner | 700530-1 | UHF, Used with VHF tuner #700458-3 in Ch. CMUA458BA, CB, CMUD447CB |
| M5 | Crystal Det. Assy. | 360607-1 | Includes 4th. Video IF, Cap., Resistor, M2 and Series Peaking Coil |
| M6 | Switch | 160229-1 | Fringe-local, Slide Type (DPDT) |
| M7 | Centering Device | 360618-1 | |
| M8 | Ion Trap | 360492-5 | |




## CHASSIS—REAR VIEW

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

Set the horizontal hold control to its mid-range position.

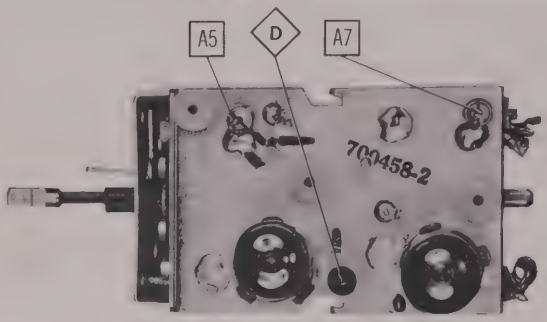
Turn the horizontal frequency slug (B1) slowly clockwise while switching off and on channel until the picture just loses sync. Turn B1 counter clockwise until picture just pulls into sync, then turn B1 an additional half turn counter clockwise.

The picture should hold sync at both extreme ends of the horizontal hold control. If necessary, readjust B1 SLIGHTLY and test for sync or pull-in as above.

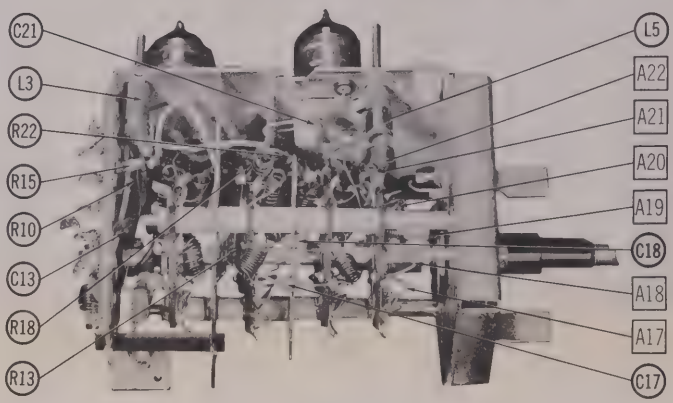
Adjust the horizontal drive control in a clockwise direction as far as possible without the presence of a vertical white line or compression near the center of the picture.

Adjust the width slug (B2) for a picture SLIGHTLY wider than necessary to fill the picture mask horizontally.

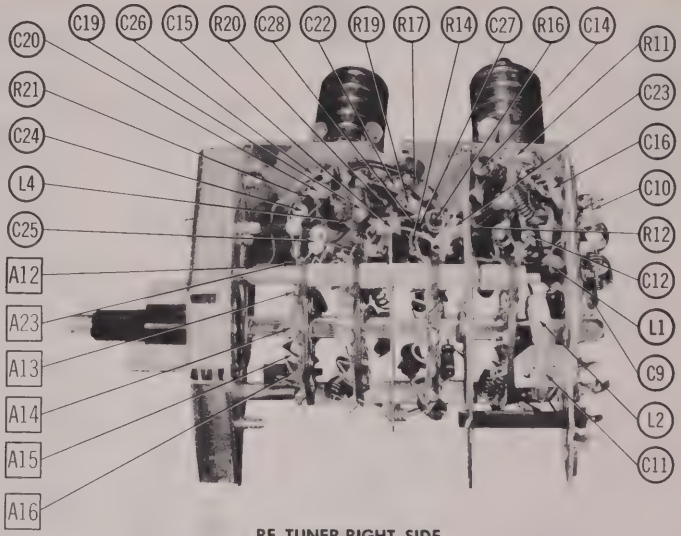
Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.




RF TUNER-TOP VIEW



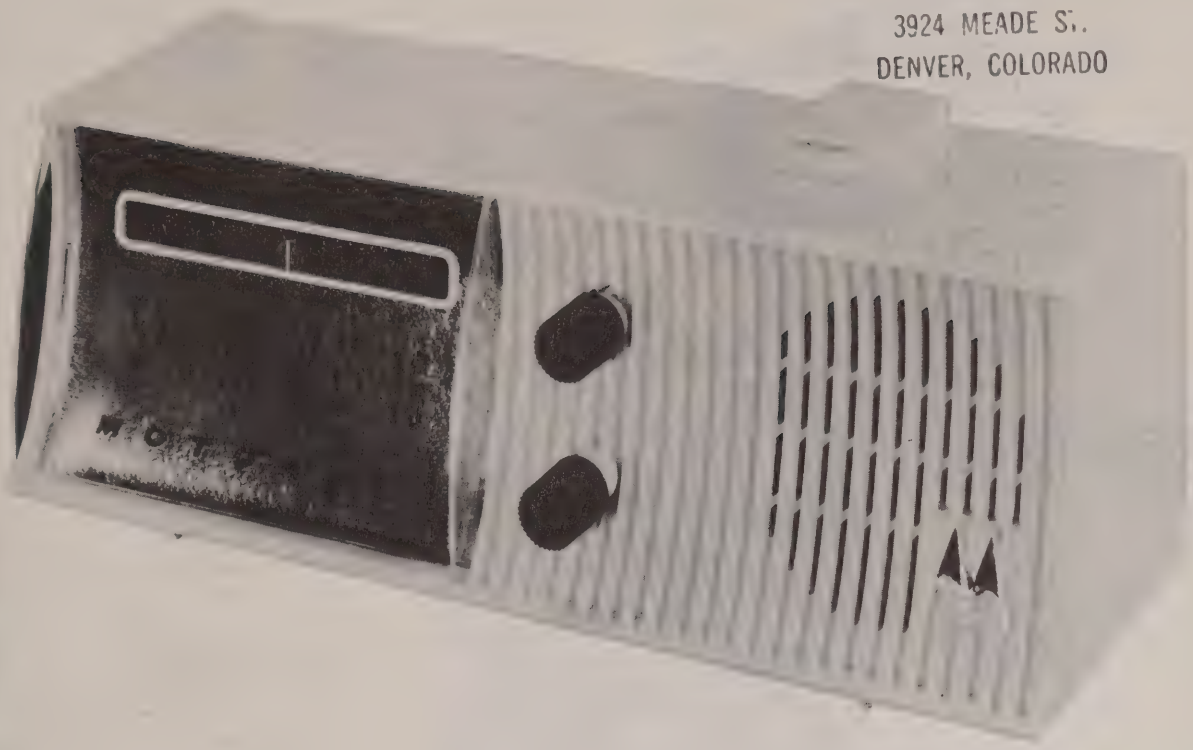

RF TUNER-LEFT SIDE




RF TUNER-RIGHT SIDE

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

MOTOROLA MODELS 57H1, A, 57H2, A, 57H3, A, 57H4, A (Ch. HS-523, HS-565)



MOTOROLA MODELS 57H1, A, 57H2, A, 57H3, A, 57H4, A (Ch. HS-523, HS-565)

| | |
|---|---|
| TRADE NAME | Motorola Models 57H1, 57H2, 57H3, 57H4 (Ch. HS-523), 57H1A, 57H2A, 57H3A, 57H4A (Ch. HS-565) |
| MANUFACTURER | Motorola Inc., 4545 W. Augusta Blvd., Chicago 51, Ill. |
| TYPE SET | AC-DC Operated AM Receiver |
| TUBES (Five) | Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amplifier, 50C5 Output, 35W4 Rectifier |
| POWER SUPPLY | 110-120 Volts AC-DC — RATING .31 Amp. @ 117 Volts AC (27 Watts) |
| TUNING RANGE—BROADCAST | 535KC-1620KC |

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Loop should be maintained in the same relative position to chassis as when the receiver is in cabinet.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | .1MFD | High side to pin 7 (grid) of 12BE6 (V1). Low side to B-. | 455KC (400~Mod) | Tuning gang fully open | Across voice coil | A1, A2, A3, A4 | Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. |
| 2. | " | " | 1620KC | " | " | A5 | " |

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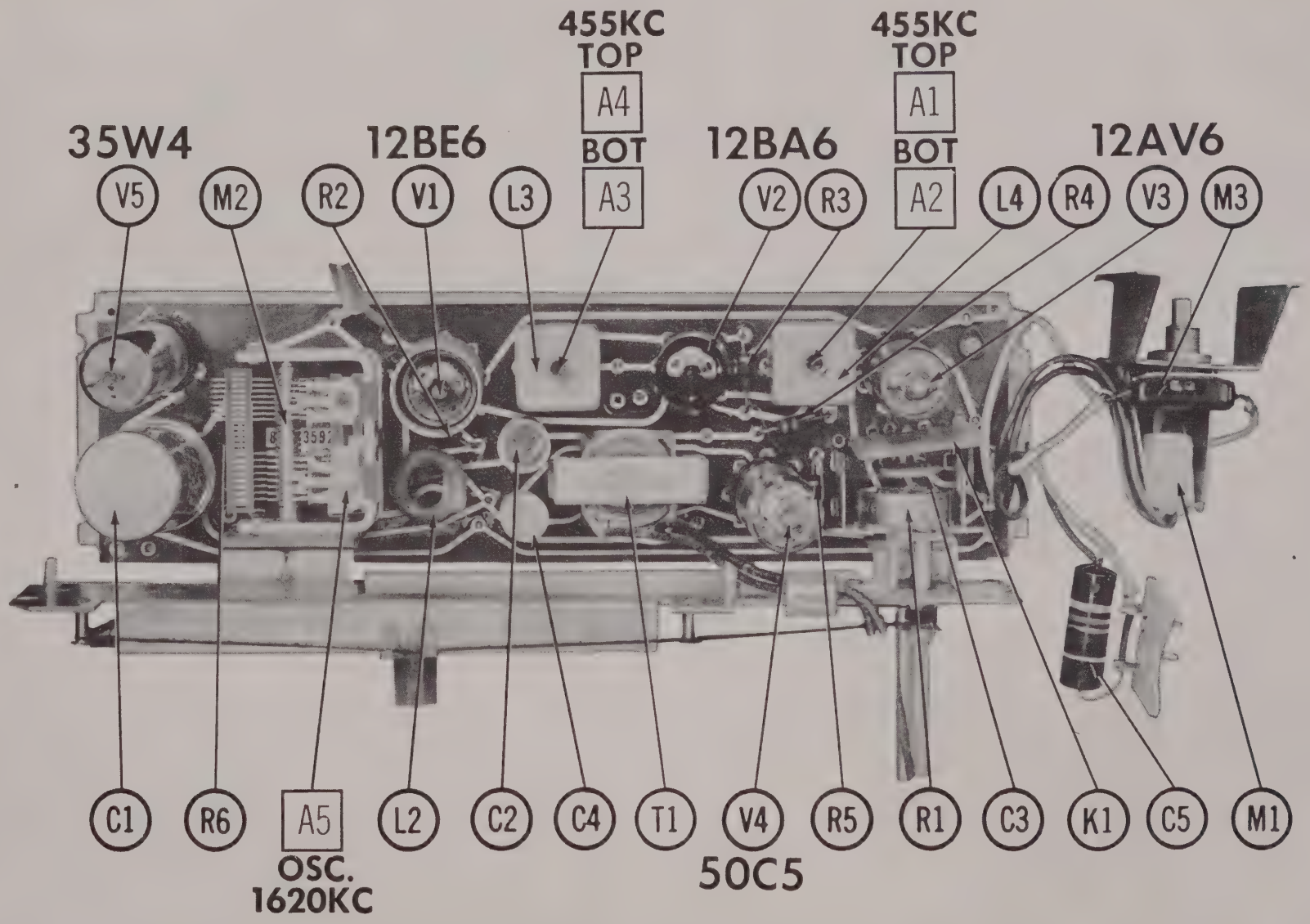



CHASSIS-TOP VIEW

# PARTS LIST AND DESCRIPTIONS

## TUBES ( GENERAL ELECTRIC, SYLVANIA )

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | Converter | 12BE6 | |
| V2 | IF Amplifier | 12BA6 | |
| V3 | Det. -AVC -AF Amp. | 12AV6 | |
| V4 | Output | 50C5 | |
| V5 | Rectifier | 35W4 | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT. | MOTOROLA PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A | ■50 | 150 | 23B632015 | AFH2-15 | BO150 | FP213 | TMD-12 | D-065 | TVL-2432 |
| B | ▲30 | 150 | | | | | | | |

## FIXED CAPACITORS

**Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | MOTOROLA PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C2 | .05 | 200 | 8B120842 | BPD-05 | DF-503 | BC2S47J | | ACE6147 | 2SE-S47 | |
| C3 | 10000 | | 21R120853 | BPD-01 | DD-103 | BYA6S1 | GP-10000 | DC511 | 5HK-S1 | |
| C4 | .03 | 400 | 8K122983 | BPD-03 | DF-303 | BC6S33J | | | 4SE-S33 | |
| C5 | .047 | 400 | 8K490232 | BPD-05 | DF-503 | CUB4S47 | | GEM-4147 | 4TM-S47 | |

## CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| | RESISTANCE | WATTS | MOTOROLA PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | |
| R1 | 1Meg | ½ | 18B635990 | | | | | Volume |

## RESISTORS

**All wattages 1/2 watt, or less, unless otherwise listed.**

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | MOTOROLA PART No. | IRC PART No. | |
| R2 | 22K | | 6R6028 | BTS-22K | |
| R3 | 100Ω | | 6R6326 | BTS-100 | |
| R4 | 3.3Meg | | 6R2118 | BTS-3.3Meg | |
| R5 | 150Ω | | 6R6373 | BTS-150 | |
| R6 | 1000Ω | 1 | 6B119404 | BTA-1000 | |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | MOTOROLA PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T1 | 2750Ω | 3-4Ω | 25B636165 | Z1101 ① | A-3025 ① | A-3332① | 26S58 ① | S-12X | ① Use original channel mounting frame |

## SPEAKER

| ITEM No. | TYPE | | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|
| | SIZE | FIELD | V. C. IMP. | MOTOROLA PART No. | QUAM PART No. | |
| SP1 | 4" | PM | 3-4Ω | 50C635982 | 4A07 | |

# PARTS LIST AND DESCRIPTIONS (Continued)

## COILS (RF-IF)

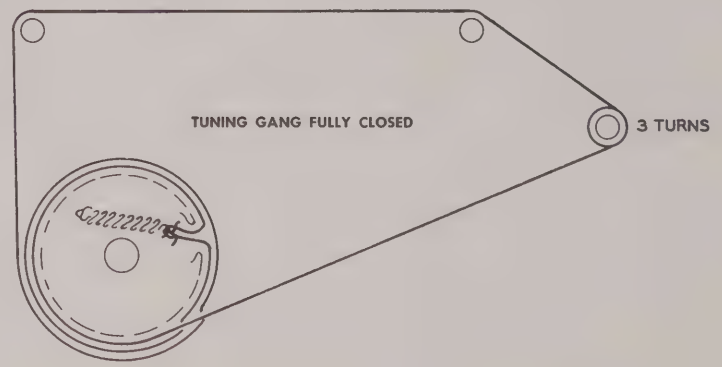
| ITEM No. | USE | REPLACEMENT DATA | | | | NOTES |
|---|---|---|---|---|---|---|
| | | MOTOROLA PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | |
| L1 | Loop Stick | 1V636196 | | | | Includes cabinet back and line cord |
| L2 | Osc. Coil | 24K636206 | | | | |
| L3 | Input IF | 24K636016 | | | | |
| L4 | Output IF | 24K636017 | | | | |

## COMPONENT COMBINATIONS

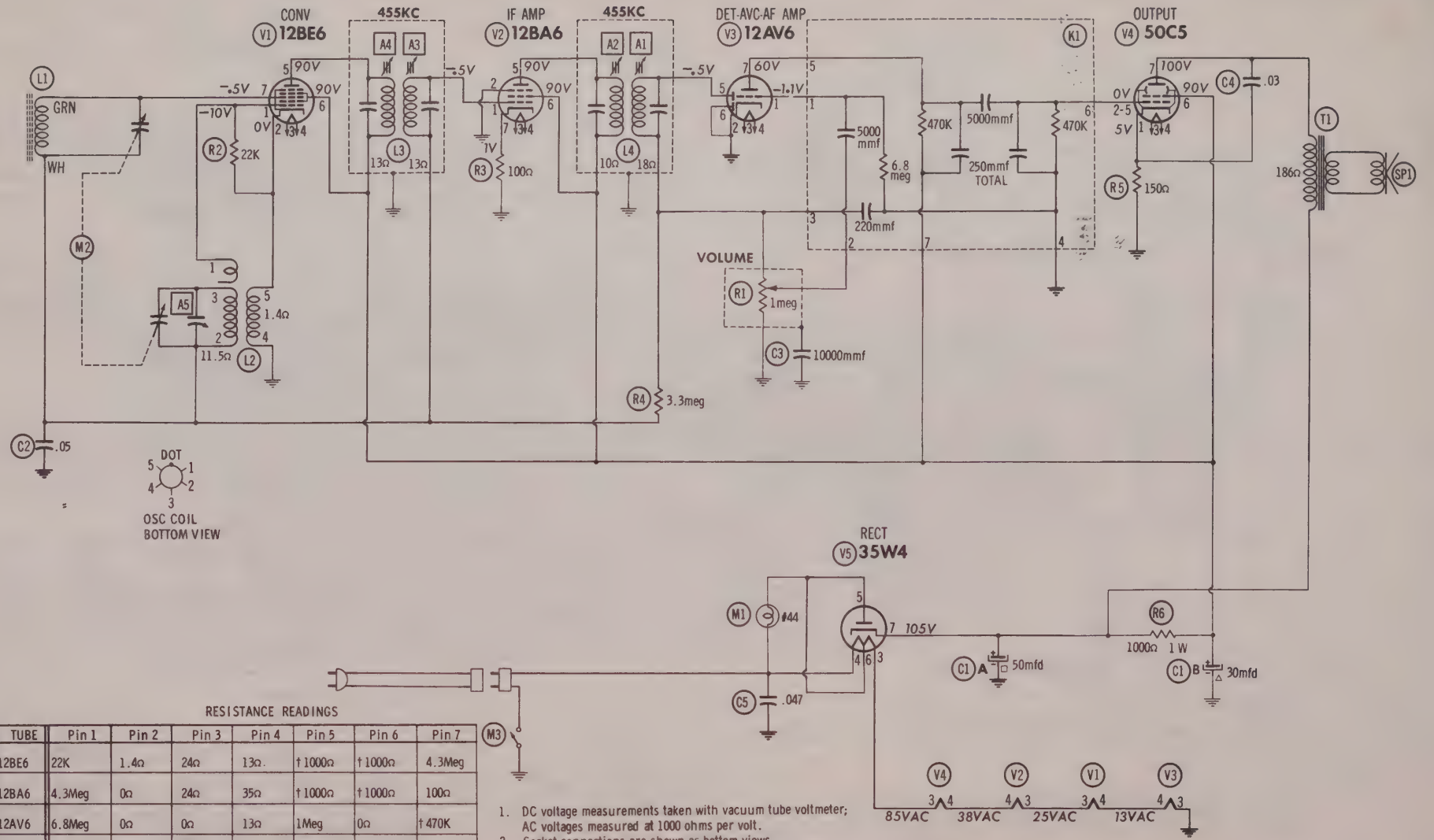
| ITEM No. | USE | DESCRIPTION | MOTOROLA PART No. | REPLACEMENT DATA | |
|---|---|---|---|---|---|
| K1 | Det.-Audio Net. | 5000MMF, 250MMF, 5000MMF, 220MMF, 470K, 470K, 6.8Meg | 51B635833 | Aerovox<br>Centralab<br>Sprague | PA-512<br>PCT-158<br>DT-5 |

## MISCELLANEOUS

| ITEM No. | PART NAME | MOTOROLA PART No. | NOTES |
|---|---|---|---|
| M1 | Dial Light | 65X11854 | #47 |
| M2 | Tuning Cap. | 19B635989 | 2 Gang |
| M3 | Switch | 40B635988 | On-off |
| | Pointer | 52A635983 | Dial |
| | Crystal | 61C635915 | Dial |
| | Knobs | 36B636007 | Tuning & volume, All models except 57H1, 57H1A |
| | Knob | 36K636858 | Tuning & volume, Models 57H1, 57H1A |
| | Cabinet | 1V636202 | Model 57H2 (white) |
| | Cabinet | 1V636201 | Model 57H1 (Ebony) |
| | Cabinet | 1V636203 | Model 57H3 (Green) |
| | Cabinet | 1V636204 | Model 57H4 (Blue) |
| | Pushbutton | 38B635994 | On-off switch |




## DIAL CORD STRINGING




RESISTANCE READINGS

| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 |
|---|---|---|---|---|---|---|---|---|
| V1 | 12BE6 | 22K | 1.4Ω | 24Ω | 13Ω | †1000Ω | †1000Ω | 4.3Meg |
| V2 | 12BA6 | 4.3Meg | 0Ω | 24Ω | 35Ω | †1000Ω | †1000Ω | 100Ω |
| V3 | 12AV6 | 6.8Meg | 0Ω | 0Ω | 13Ω | 1Meg | 0Ω | †470K |
| V4 | 50C5 | 150Ω | 470K | 85Ω | 35Ω | 470K | †1000Ω | †185Ω |
| V5 | 35W4 | NC | NC | 85Ω | 120Ω | 110Ω | 110Ω | 50K |

† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to commom negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

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MODEL 21-CD-7895U

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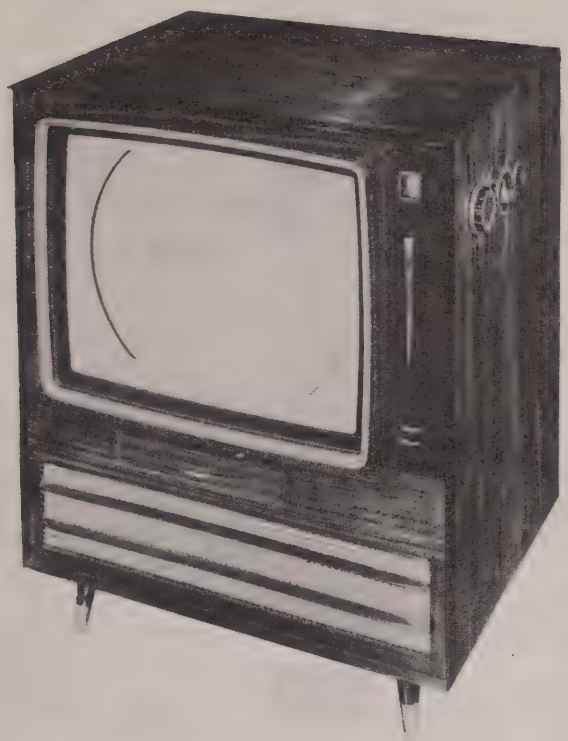

RCA VICTOR MODEL 21-CD-7895U (Ch. CTC5P)

| TRADE NAME | RCA Victor | MODELS | CHASSIS |
|---|---|---|---|
| | | 21-CD-7975, U, 21-CD-7996, U, 21-CD-7999, U | CTC5AA, AB |
| | | 21-CD-7895, U, 21-CD-7897, U | CTC5N, P |
| | | 21-CD-7915, U, 21-CD-7916, U, 21-CD-7917, U | CTC5R, T |
| | | 21-CD-7935, U, 21-CD-7936, U, 21-CD-7956, U, 21-CD-7958, U | CTC5U, W |

| | |
|---|---|
| MANUFACTURER | Radio Corporation of America, RCA Victor Television Division, Camden 8, N.J. |
| TYPE SET | Color Television Receiver |
| TUBES | Thirty-one |
| POWER SUPPLY | 110-120 Volts AC, 60 Cycle RATING 390 Watts 3.75 Amp. @ 117 Volts AC |
| TUNING RANGE | Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier) |

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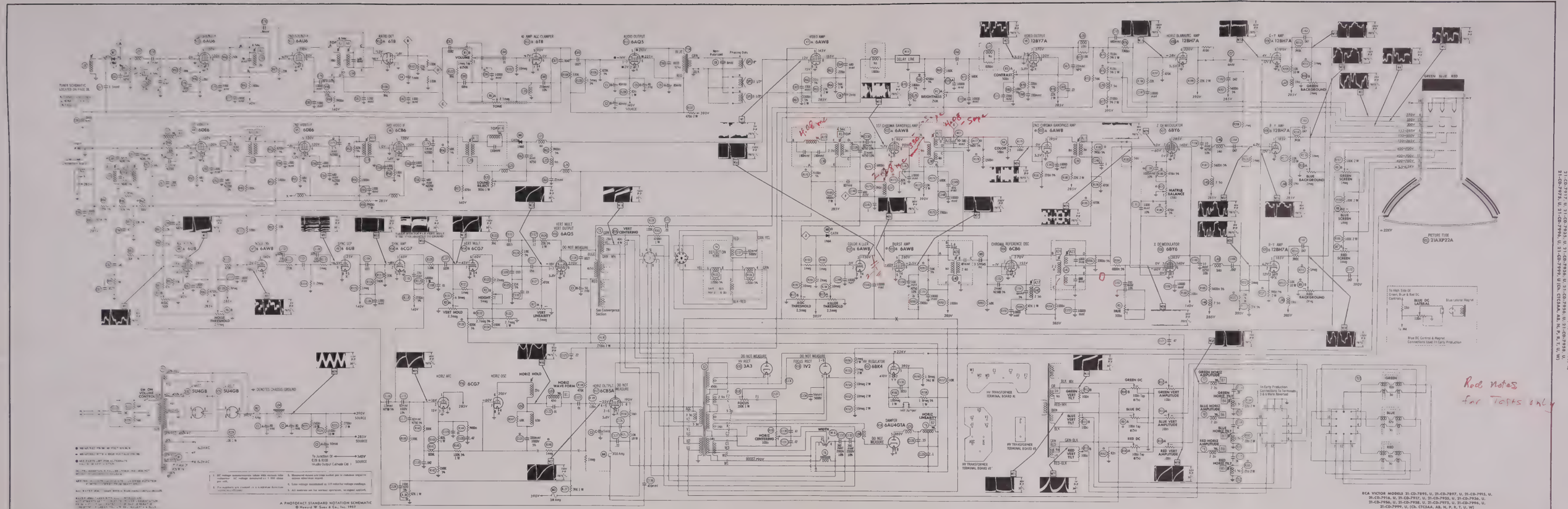
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# BLOCK DIAGRAM

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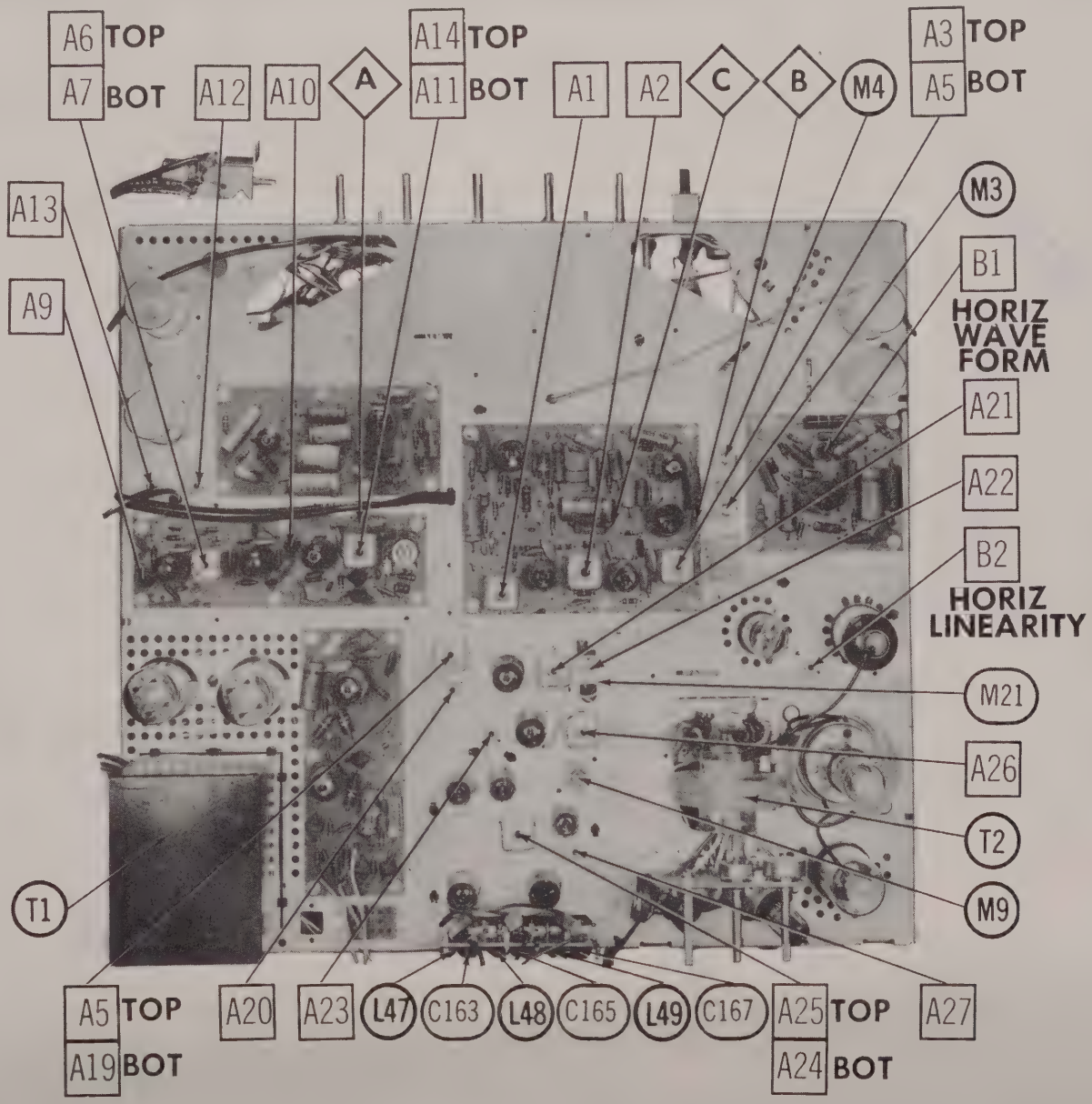


CHASSIS TOP VIEW

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## CHASSIS-TOP VIEW

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# ALIGNMENT INSTRUCTIONS

**ALIGNMENT INSTRUCTIONS. READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

**The high voltage should be disable by removing the fuse (4d). Connect a 3000 ohm 100 watt resistor from B+ side of CSA (filter capacitor) to chassis. Turn the AGC control (R58) fully clockwise. Turn the focus control (R56) fully counter clockwise. Connect the negative lead of a variable bias supply to point Ⓨ thru a 100K resistor. Connect the positive lead to chassis and adjust for -10 volts bias at the connection.**

**SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM**

Remove the bottom shield from the video IF printed board.
Connect two matched 100K (±1%) resistors in series from point Ⓨ to chassis. The junction of these two resistors is alignment point Ⓧ as shown on the schematic.

| DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|
| 1. . 01MFD | High side to point Ⓐ. Low side to chassis. | 4.5MC (unmod) | Any | DC probe to point Ⓧ. Common to point Ⓨ. | A1, A2, A3, A4 | Adjust for maximum deflection. Adjust signal generator for -14 volts on VTVM when finally peaked. |
| 2. " | " | " | " | DC probe to point Ⓨ. Common to point Ⓧ. | A4 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. Remove the two 100K resistors and test equipment. |

**SOUND IF ALIGNMENT USING TV SIGNAL GENERATOR AND OSCILLOSCOPE**

Use frequency modulated signal with 60~ modulation and 4500KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. . 01MFD | High side to point Ⓐ. Low side to chassis. | 4.5MC (4500KC Swp) | 4.5MC | Any | Vert. amp. to point Ⓐ. Low side to chassis. | A1, A3, A3 | Disconnect stabilizing capacitor (C4). Adjust for curve of maximum amplitude and symmetry as in Fig. 1. Recement C4. |
| 2. " | " | " | " | " | Vert. amp. to point Ⓔ. Low side to chassis. | A4 | Adjust so that the 4.5MC marker occurs at the center of the crossover lines as in Fig. 2. SLIGHTLY retouch A3 for maximum amplitude and straightness of crossover lines |

**VIDEO 4.5MC TRAP ALIGNMENT**

Connect a short jumper from pin 1 (grid) of the 6CB6 (V8) to chassis.
The -10 volts at point Ⓨ may have to be lowered to obtain sufficient indication on the scope.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 3. . 01MFD | High side to terminal "D" of video amp. printed board. | Not used. | 4.5MC (400~ Mod) | Any | Vert. amp thru detector (Fig. 3) to point Ⓔ. Low side to chassis. | A5 | Using high generator output adjust A5 for MINIMUM 400% indication on scope. Remove short from pin 1 of V8. Replace shield on video IF printed board. |

**VIDEO IF ALIGNMENT**

Connect the negative lead of a variable bias supply to terminal "B" of the video IF printed board. Connect the positive lead to chassis.
Adjust the bias for -8 volts at the connection. Connect a short clip lead from terminal "C" of the video amplifier printed board to chassis.
For step 11, connect the negative lead of a second variable bias supply to terminal "T" of the sound, AGC and int sync printed board.
Connect the positive lead to chassis. Adjust for -4 volts at terminal "T".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 4. 1500MMF | High side to pin 1 (grid) of 6JE8 (V4). Low side to chassis. | 43.5MC (03MC Swp | 42.17MC 45.75MC | Any non-interfering channel | Vert. amp. to output of detector (Fig. 3). Connect "detector" lead of detector probe (Fig. 3) to pin 5 (plate) of 6JE8 (V5). Connect one "load" lead (Fig. 3) to pin 5 (plate) of 6CB6 (V6). Connect low side of scope and ground lead of detector probe to chassis. | A6, A7 | Adjust for response similar to Fig. 4. Use just enough signal to provide .1 volts peak to peak of scope when making this adjustment. |
| 5. " | High side to point Ⓧ. Low side to chassis. | Not used. | 45.75MC (400% Mod) | " | Vert. amp thru 10K to terminal "D" of the video amp. printed board. Low side to chassis. | A6, A9 | Preset sound reject control (R20) at the center of its range. Adjust for maximum 400% indication on scope. |
| 6. " | " | " | 43.5MC (400% Mod) | " | " | A10 | " |
| 7. " | " | " | 43.5MC (400% Mod) | " | " | A11 | " |
| 8. " | " | " | 41.25MC (400% Mod) | " | " | A13 | Adjust for MINIMUM 400% indication on scope. |
| 9. " | " | " | 47.25MC (400% Mod) | " | " | A13 | " |
| 10. " | " | " | 41.25MC (400% Mod) | " | " | A14, R30 | Adjust for MINIMUM 400% indication on scope. Repeat step 7. |
| 11. " | High side to point Ⓨ. Low side to chassis. Use very short exposed ends on leads. | 43.5MC (03MC Swp | 43.17MC 43.75MC 45.09MC 45.75MC | 4 | " | | Check for response curve similar to Fig. 5 with markers as indicated. Retouch A8, A10 and A1 to obtain proper response. If necessary, (Use 3 volts peak to peak on scope.) Repeat step 10. |

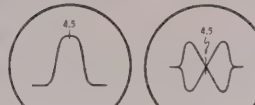


FIG. 1

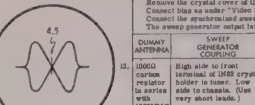


FIG. 2

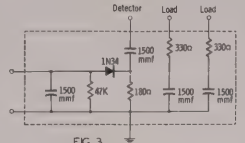


FIG. 3

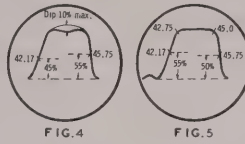


FIG. 4

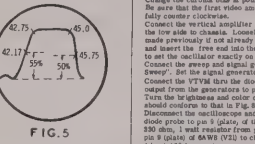


FIG. 5

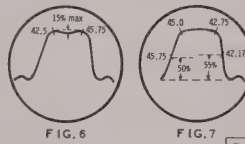


FIG. 6

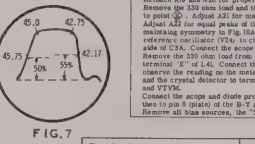


FIG. 7

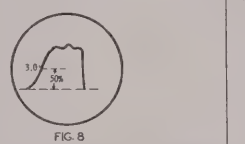


FIG. 8

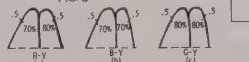


FIG. 12

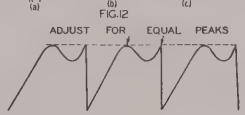


FIG. 13

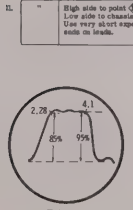


FIG. 9

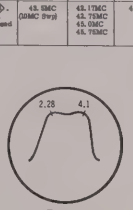


FIG. 10A

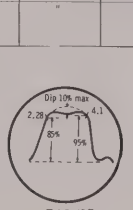


FIG. 10B

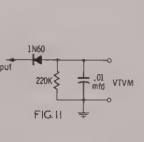


FIG. 11

**ADDITIONAL VIDEO IF ALIGNMENT FOR UHF MODELS**

Remove the crystal cover of the UHF tuner to make sweep connection to the front terminal of the crystal holder.
Connect bias as under "Video IF Alignment". Keep the RF bias set at -8 volts.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

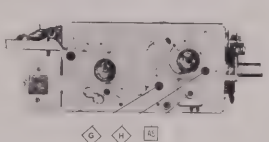
| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 12. 100Ω carbon resistor in series with 1500MMF ceramic capacitor | High side to front terminal of UHF crystal holder in tuner. Low side to chassis. (Use very short leads.) | 650MC (10MC Swp) | 42.5MC 45.75MC | Between channels 43 and 44. | Connect a 180Ω carbon resistor in series with a 1500MMF capacitor from point Ⓧ to chassis with the resistor next to chassis. Connect the vert. amp. of scope thru det. (Fig. 3) to the high side of the 180Ω resistor. Low side to chassis. | A15, A16, A17, A18 | Couple the marker generator loosely to detector probe (Fig. 3) to provide markers. Set sweep generator output to provide .5 volts (or less) peak to peak on scope. Adjust A15 for maximum gain with markers as indicated in Fig. 5. If necessary, adjust A18 to place 45.75MC marker at peak of curve. Adjust A17 for MINIMUM tilt of curve. If necessary, adjust A16 for proper bandwidth. Remove the 180Ω resistor and the 1500MMF capacitor. |
| 13. Two 120Ω carbon resistors | Across VHF antenna terminals with 130Ω in each lead. | See freq. chart. | 43.17MC 43.75MC 45.09MC 45.75MC | Check on all VHF channels. | Vert. amp. thru 10K to terminal "D" of video amp. printed board. | A9, All | Couple marker generator loosely to first video IF amp. grid. Check for response similar to Fig. 7 on all VHF channels. SLIGHTLY retouch A8 and All if necessary to correct for any overall tilt. |
| 14. " | Across UHF antenna terminals with 130Ω in each lead. | " | " | Check on all UHF channels. | " | A15, A16, A17 | Leave marker connected as in step 13. Check for response similar to Fig. 7 on all UHF channels. SLIGHTLY retouch A15, A16 and A17 if necessary to correct any overall tilt. Remove test equipment and blue supplies. |

**VIDEO AND BANDPASS ALIGNMENT**

Set the receiver to channel 4.
Connect bias as under "Video IF Alignment".
Adjust the RF bias for -4 volts and the IF bias for -9 volts.
Change the chroma bias at point Ⓨ for a reading of -8 volts.
Be sure that the first video amplifier tube is in its socket. Turn the killer threshold control (R17A) and noise threshold control (R68) fully counter clockwise.
Connect the vertical amplifier of the oscilloscope thru the scope probe to terminal "C" of the video amplifier printed board. Connect the low side to chassis. Loosely couple the marker generator to the scope connection. Remove the short from the antenna terminals if one was made previously is not already done. Set the generator for 113MC. Connect an insulated wire to the RF "IN" terminal of the generator and insert the free end into the tuner near the oscillator circuit. Adjust the fine tuning control for near zero beat on the scope. This is to set the oscillator exactly on frequency.
Connect the sweep and signal generators, using the R-F modulator, to the antenna terminals and set the sweep generator for "Video Sweep". Set the signal generator to 67.25MC.
Connect the VTVM thru the diode probe (Fig. 3) between terminals "B" and "D" of the video amplifier printed board. Adjust the output from the generators to produce -1.5 volts on the VTVM.
Turn the brightness and color controls fully counter clockwise and the contrast control fully clockwise. The response on the scope should conform to that in Fig. 5.
Disconnect the oscilloscope and diode probe from terminal "C" of the video amplifier printed board and reconnect the scope and diode probe to pin 9 (plate, of the 6AW8 chroma bandpass amplifier (V22). Load the bandpass transformer (L34) by connecting a 330 ohm, 1 watt resistor from pin 8 (screw) to pin 9 (plate) of V22. Connect a 33MFD, 350 volt paper electrolytic capacitor from pin 9 (plate) of 6AW8 (V22) to chassis. Adjust A19 for maximum gain at 4.08MC
Adjust A20 for maximum response at 3.58MC
Retouch A19 and A20 for proper response similar to Fig. 9 but do not adjust A20 to tune below 2.58MC.
Remove the 330 ohm load and the 33MFD capacitor which was placed in the circuit previously. Connect the scope and diode probe to point Ⓨ. Adjust A21 for maximum gain at 4.08MC.
Adjust A22 for equal peaks of the response curve as shown in Fig. 10A. Retouch A21 for maximum gain of response curve while maintaing symmetry to Fig. 10A. Turn the color control fully clockwise. Connect a short jumper from pin 1 (grid) 6CB6 reference oscillator (V24) to chassis. Connect a 330 ohm, 1 watt resistor from pin 5 (plate) of the 6BY6 (V25) to the ungrounded side of C3A. Connect the scope and diode probe to pin 5 (plate) of 6BY6 (V25). Adjust A23 for the response shown at Fig. 10B.
Remove the 330 ohm load from V26 and the short from V24. Connect the VTVM thru the crystal detector shown in Fig. 11 to terminal "E" of L41. Connect the common side of the VTVM to chassis. Rotate the "Hue" control from one end to the other and observe the reading on the meter. Adjust A24 for the same reading at both ends of the "Hue" control settings. Move the VTVM and the crystal detector to terminal "D" of L41 and adjust A25 for maximum reading on the VTVM. Remove the crystal detector and VTVM.
Connect the scope and diode probe to pin 1 (plate) of the R-Y amplifier (V25), then to pin 1 (plate) of the B-Y amplifier (V28) and then to pin 8 (plate) of the B-Y amplifier (V26) and check the R-Y, B-Y and G-Y responses as shown in Fig. 12.
Remove all bias sources, the "500 ohm resistor leading the B+ and the scope. Replace the fuse M3 in its mounting clip.

**TELEVISION CHANNEL FREQUENCIES**

| Channel No. | Frequency Band (Mc) | Video Carrier | Sound Carrier | Channel No. | Frequency Band (Mc) | Video Carrier | Sound Carrier | Channel No. | Frequency Band (Mc) | Video Carrier | Sound Carrier | Channel No. | Frequency Band (Mc) | Video Carrier | Sound Carrier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 54-60 | 55.25 | 59.75 | 23 | 534-540 | 535.25 | 539.75 | 44 | 650-656 | 651.25 | 655.75 | 64 | 770-776 | 771.25 | 775.75 |
| 3 | 60-66 | 61.25 | 65.75 | 24 | 540-546 | 541.25 | 545.75 | 45 | 656-662 | 657.25 | 661.75 | 65 | 776-782 | 777.25 | 781.75 |
| 4 | 66-72 | 67.25 | 71.75 | 25 | 546-552 | 547.25 | 551.75 | 46 | 662-668 | 663.25 | 667.75 | 66 | 782-788 | 783.25 | 787.75 |
| 5 | 76-82 | 77.25 | 81.75 | 26 | 552-558 | 553.25 | 557.75 | 47 | 668-674 | 669.25 | 673.75 | 67 | 788-794 | 789.25 | 793.75 |
| 6 | 82-88 | 83.25 | 87.75 | 27 | 558-564 | 559.25 | 563.75 | 48 | 674-680 | 675.25 | 679.75 | 68 | 794-800 | 795.25 | 799.75 |
| 7 | 174-180 | 175.25 | 179.75 | 28 | 564-570 | 565.25 | 569.75 | 49 | 680-686 | 681.25 | 685.75 | 69 | 800-806 | 801.25 | 805.75 |
| 8 | 180-186 | 181.25 | 185.75 | 29 | 570-576 | 571.25 | 575.75 | 50 | 686-692 | 687.25 | 691.75 | 70 | 806-812 | 807.25 | 811.75 |
| 9 | 186-192 | 187.25 | 191.75 | 30 | 576-582 | 577.25 | 581.75 | 51 | 692-698 | 693.25 | 697.75 | 71 | 812-818 | 813.25 | 817.75 |
| 10 | 192-198 | 193.25 | 197.75 | 31 | 582-588 | 583.25 | 587.75 | 52 | 698-704 | 699.25 | 703.75 | 72 | 818-824 | 819.25 | 823.75 |
| 11 | 198-204 | 199.25 | 203.75 | 32 | 588-594 | 589.25 | 593.75 | 53 | 704-710 | 705.25 | 709.75 | 73 | 824-830 | 825.25 | 829.75 |
| 12 | 204-210 | 205.25 | 209.75 | 33 | 594-600 | 595.25 | 599.75 | 54 | 710-716 | 711.25 | 715.75 | 74 | 830-836 | 831.25 | 835.75 |
| 13 | 210-216 | 211.25 | 215.75 | 34 | 600-606 | 601.25 | 605.75 | 55 | 716-722 | 717.25 | 721.75 | 75 | 836-842 | 837.25 | 841.75 |
| 14 | 470-476 | 471.25 | 475.75 | 35 | 606-612 | 607.25 | 611.75 | 56 | 722-728 | 723.25 | 727.75 | 76 | 842-848 | 843.25 | 847.75 |
| 15 | 476-482 | 477.25 | 481.75 | 36 | 612-618 | 613.25 | 617.75 | 57 | 728-734 | 729.25 | 733.75 | 77 | 848-854 | 849.25 | 853.75 |
| 16 | 482-488 | 483.25 | 487.75 | 37 | 614-614 | 609.25 | 613.75 | 58 | 734-740 | 735.25 | 739.75 | 78 | 854-860 | 855.25 | 859.75 |
| 17 | 488-494 | 489.25 | 493.75 | 38 | 614-620 | 615.25 | 619.75 | 59 | 740-746 | 741.25 | 745.75 | 79 | 860-866 | 861.25 | 865.75 |
| 18 | 494-500 | 495.25 | 499.75 | 39 | 620-626 | 621.25 | 625.75 | 60 | 746-752 | 747.25 | 751.75 | 80 | 866-872 | 867.25 | 871.75 |
| 19 | 500-506 | 501.25 | 505.75 | 40 | 626-632 | 627.25 | 631.75 | 61 | 752-758 | 753.25 | 757.75 | 81 | 872-878 | 873.25 | 877.75 |
| 20 | 506-512 | 507.25 | 511.75 | 41 | 632-638 | 633.25 | 637.75 | 62 | 758-764 | 759.25 | 763.75 | 82 | 878-884 | 879.25 | 883.75 |
| 21 | 512-518 | 513.25 | 517.75 | 42 | 638-644 | 639.25 | 643.75 | 63 | 764-770 | 765.25 | 769.75 | 83 | 884-890 | 885.25 | 889.75 |
| 22 | 518-524 | 519.25 | 523.75 | 43 | 644-650 | 645.25 | 649.75 | | | | | | | | |



RF TUNER TOP VIEW

RCA VICTOR MODELS 21-CD-2966, U; 21-CD-2967, U; 21-CD-2975, U; 21-CD-2976, U; 21-CD-2977, U; 21-CD-2978, U; 21-CD-2979, U; 21-CD-2980, U; 21-CD-2981, U; 21-CD-2982, U; 21-CD-2983, U; 21-CD-2984, U; 21-CD-2985, U; 21-CD-2986, U; 21-CD-2987, U; 21-CD-2988, U; 21-CD-2989, U; 21-CD-2990, U; 21-CD-2991, U; 21-CD-2992, U; 21-CD-2993, U; 21-CD-2994, U; 21-CD-2995, U; 21-CD-2996, U; 21-CD-2997, U; 21-CD-2998, U; 21-CD-2999, U (CH. CT65AA, AB, M, P, S, T, U, W)

# MISCELLANEOUS ADJUSTMENTS

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Connect a 0-500 MA meter across the horizontal output fuse holder (M4). Remove the fuse (M4).

Loosen the cover of the high voltage cage and slide it back. Connect the VTVM thru the high voltage probe to the cup at the base of the high voltage rectifier tube (V20). Connect the common lead of the VTVM to chassis.

Turn the set on and tune in a TV station.

Set the width switch (M16) on the rear of the high voltage cage to its center position.

If necessary, adjust the vertical hold control to synchronize the picture vertically.

Adjust the horizontal hold to synchronize the picture horizontally. Using a low capacity probe, connect the vertical amplifier of the scope to terminal "J" of the horizontal oscillator printed board. Adjust the horizontal waveform slug (B1) until the sharp peaks and the round peaks of the waveform on the scope are of equal heights as in Fig. 13; keep the picture in sync during this adjustment with the horizontal hold.

Rotation of the horizontal hold should cause the picture to lose sync at either end of its rotation. From counter clockwise position, the picture should pull into sync with between 1 and 3 bars present. The picture should remain in sync for three complete turns of the knob clockwise from the pull-in point.

The proper setting for the horizontal hold is 1 turn counter clockwise from point of pull-in at the clockwise position of the knob. Adjust the horizontal linearity slug (B2) for a MINIMUM current reading on the MA meter. This will give the best horizontal linearity. Adjust the height and vertical linearity controls for a 5/8 inch over scan, at the top and bottom of the screen, with 117 volts line voltage. Adjust the focus control for proper focus.

## COLOR AFC ALIGNMENT

Connect the color bar generator to the antenna terminals. Turn the channel selector to channel 3 and tune the signal in on the receiver. Adjust the horizontal control on the generator (if one is used, if not use the one on the receiver) until the bars synchronize horizontally on the picture screen. Adjust the fine tuning control until the picture shows no sound interference. Adjust the color control (R4) until color appears in the bar pattern. Set the color and contrast controls to the center of their ranges. Turn the killer threshold control (R17A) fully counter clockwise. Make sure the reference oscillator is operating by checking for a DC voltage at pin 7 (number 3 grid) of V26 of V27 (demodulators). Adjust A26 if necessary to start the oscillator. Connect a jumper between terminals "B" and "C" of L38. Connect the DC probe of the VTVM to point ⟨J⟩. Connect the common lead to chassis. Adjust A27 for a reading of -6 volts on the meter. Readjust A26 for zero beat as observed on the picture tube. Remove the short from L38. Move the DC probe of the VTVM to point ⟨F⟩. Connect a clip lead from terminal "D" of L37 to point ⟨F⟩. Adjust the AGC threshold control (R17B) for a reading of -. 5 volts on the meter. Remove the short from L37.

Move the DC probe of the VTVM thru the crystal detector (Fig. 11) to terminal "E" of L41. Rotate the "Hue" control from one end to the other and observe the voltage readings obtained on the meter. Adjust A24 for the same reading at both extreme settings of the "Hue" control.

Move the DC probe of the VTVM and the crystal detector to terminal "D" of L41 and adjust A25 for maximum DC reading on the VTVM.

Move the DC probe and the crystal detector back to terminal "E" of L41 and adjust the "Hue" control for MINIMUM voltage at the center of its range.

Connect the vertical amplifier of the scope to pin 2 (red grid) of the picture tube. Connect the low side to chassis. Remove the 6BY6 (V27) from its socket. Retouch A24 for correct wave form of the R-Y signal as shown in Fig. 14. Move the vertical amp. connection of the scope to pin 12 (blue grid) of the picture tube. Replace V27 in its socket and remove V26 from its socket. Retouch A25 for proper B-Y waveform as seen in Fig. 14. Observe the reading on the VTVM at terminal "E" of L41 and rotate the "Hue" control from one end to the other. The voltage should not be less than 8 volts at any position of the "Hue" control.

Move the scope connection back to the red grid (Pin 2) of the picture tube and set the "Hue" control for the proper R-Y waveform. Let the amplitude of the response curve represent 100%.

Move the vertical amplifier lead of the scope to pin 12 (blue grid) of the picture tube. The amplitude of the pattern should be 60% of that at the red grid. If necessary, adjust the matrix balance control (R15) to make the amplitude at the blue grid 60%.

Move the scope connection to pin 6 (green grid) of the picture tube. The amplitude of the waveform should be approximately 40. 8% of the amplitude of the pattern on the red grid and should not deviate more than 5% from this percentage.

## KILLER THRESHOLD CONTROL ADJUSTMENT

Switch the receiver to a channel where no signal is being used and turn the contrast control clockwise until noise is seen on the screen. Turn the color control fully clockwise. Color should be present in the noise on the screen. Adjust the killer threshold control (R17A) until the color in the noise pattern just disappears.

## COMPLETE SET-UP PROCEDURE

Make sure that the AGC is properly adjusted and that the horizontal sweep circuits have been adjusted as per instructions.

## PRELIMINARY CONVERGENCE ADJUSTMENTS

Connect the RF output of the dot generator to the antenna terminals. Preset the red, blue and green horizontal and vertical amplitude controls fully counter clockwise. The controls are located on the front apron of the chassis below the picture tube. Preset the red, blue and green vertical tilt control to mid-range.

Adjust the red, blue and green DC controls and the lateral magnet (or control on earlier production receivers) to produce a white dot at the center of the screen. Lateral movement of the dots are accomplished by adjustment of the lateral magnet. Red and green movement is opposite in direction to that of the blue.

Keep the focus in adjustment while making the above adjustments. Switch the dot generator to "Stand-by" position.

## COLOR PURITY ADJUSTMENTS

Switch the channel selector to an unused channel and turn the contrast control fully counter clockwise.

Set the red tabs on the purity magnet together.

Turn the six field neutralizing magnets fully counter clockwise. These adjustments are accessible from the front of the set after the front trim is removed. Loosen the wing nuts at each side of the deflection yoke and slide the yoke as far to the rear as possible. Turn the blue and green screen controls fully counter clockwise. The controls are located on the front apron of the chassis behind the control case, which should be removed.

Rotate the purity magnet around the neck of the picture tube and at the same time adjust the tabs with respect to each other to produce a uniform red area at about 8 o'clock position on the screen and displaced from the center by a distance of approximately one-half the area itself. Move the yoke forward until the most uniform red screen without neck shadow is obtained. When the best position is found with a MINIMUM of purity error at the edges of the screen, tighten the wing nuts holding the yoke in place.

Tune in a station broadcasting a black and white picture and adjust the blue and green screen controls to produce a black and white picture. Adjust the neutralizing magnets for best white uniformity in the areas of each magnet. Some areas will require adjustment of more than one magnet. Check each color field by turning the other two screen controls down in turn, to insure that screen purity has not been sacrificed at the expense of uniformity.

## VERTICAL DYNAMIC CONVERGENCE ADJUSTMENTS

Recheck "Preliminary Convergence Adjustment" for correct setting of the three DC convergence controls and the lateral magnet to produce a white dot at the center of the screen.

Switch dot generator to vertical bars. Referring to the center vertical bar nearest the center of the screen, turn the red vertical amplitude control fully clockwise and adjust the red vertical tilt control for maximum displacement of the red bar at the center of the screen. Turn the green vertical amplitude control fully clockwise and adjust the green vertical tilt control for maximum displacement of the green vertical bar at the center of the screen. The direction of displacement of the green bar should be opposite to that of the red bar.

Adjust the red and green vertical amplitude and tilt controls to produce straight vertical red and green bars parallel to the blue bar. Converge the three bars using the red and green DC controls to form a single white vertical bar at the center of the screen. SLIGHT readjustment of the red and green vertical amplitude and tilt controls may be required to produce this condition. Recheck the focus.

Turn the generator to horizontal bars and using the blue DC control displace the blue bar SLIGHTLY away from the others. Adjust the blue vertical amplitude and tilt controls for equal displacement of the blue bars with respect to the others from top of the screen to the bottom near the center of the screen (horizontally).

## HORIZONTAL DYNAMIC CONVERGENCE ADJUSTMENTS

Referring to the center horizontal bars, turn the blue horizontal amplitude (B6) clockwise until the blue bar appears in the center of the screen. The blue bar will be below the red and green bars. Alternately adjust the blue horizontal tilt (B3) and amplitude (B6) to produce a straight blue horizontal bar across the center of the screen.

Shunt the red grid of the picture tube to chassis through a 100K resistor. (Red wire at the rear edge of the chroma printed board.) Alternately adjust the green horizontal amplitude (B7) and tilt (B4) to produce a green bar parallel to the blue bar over its entire length at the center of the screen.

Remove the shunt from the red grid of the picture tube and place it on the green grid. Alternately adjust the red horizontal amplitude (B8) and tilt (B5) to produce a red bar parallel to the blue bar over its entire length at the center of the screen. Remove the 100K shunt from the green grid.

With the blue DC control, move the blue bar near the other two and if necessary, retouch the above adjustments SLIGHTLY until all three bars are equally displaced along the entire center line of the screen.

Turn the generator to the dot pattern and converge the dot pattern using the three DC controls and the lateral magnet. The dot pattern should show maximum convergence over the entire area of the screen.

## GRAY SCALE ADJUSTMENTS

Turn all the screen controls fully counter clockwise and the background controls 30% from full counter clockwise.

Turn the brightness control fully counter clockwise and the contrast control to the center of its range.

Connect the VTVM between the red grid and the red cathode of the picture tube. Adjust the red background control for -100 volts on the meter. Adjust the brightness control for -70 volts on the meter.

Leave the brightness control at this setting and adjust the three screen controls for a gray picture at a very low light level. After setting the screen controls, do not change the settings of the red screen control or the red background control during the balance of this procedure.

# MISCELLANEOUS ADJUSTMENTS (cont.)

NOTE: Earlier production sets which did not use a red background control must be adjusted as follows: Set the screen controls fully counter clockwise and the green and blue background controls 30% from full counter clockwise. Turn the contrast control to the center of its range.

Connect the VTVM between the red grid and the red cathode of the picture tube. Adjust the brightness control for a reading of -70 volts on the VTVM. Leave the brightness control at this setting and adjust the three screen controls for a gray picture at a very low light level. After setting the screen controls, do not change the setting of the red screen control during the balance of this procedure.

Advance the contrast control and look at the picture. One color will usually predominate in the high brightness areas of the picture. Depending on which color is predominating proceed as follows:

1. If green is predominant in the highlights, turn the green background control SLIGHTLY counter clockwise and advance the green screen SLIGHTLY clockwire until gray is obtained in the low light areas.
2. If blue predominates in the highlights turn the blue background SLIGHTLY counter clockwise and advance the blue screen clockwise until gray is achieved in the low light areas.
3. If blue/green (cyan) background predominates in the highlights, turn both the blue and green background controls SLIGHTLY counter clockwise and advance the blue and green screen controls SLIGHTLY clockwise until gray is obtained in the low light levels.
4. If magenta is predominant in the highlights, turn the green background control SLIGHTLY clockwise and observing the low light areas adjust the green screen control counter clockwise to make the low light areas gray.
5. If yellow predominates the highlights, turn the blue background control SLIGHTLY clockwise and adjust the blue screen control SLIGHTLY counter clockwise to achieve gray in the low light areas.
6. If red predominates the highlights, turn the blue and green background controls SLIGHTLY clockwise and adjust both the blue and green screen controls SLIGHTLY counter clockwise to achieve gray in the low light areas.

Any of the conditions in 4, 5 and 6 indicates low color temperature and these steps are designed to correct this.

If the receiver is adjusted to too high a color temperature the result will be a loss of reds in the picture detail causing inability to obtain good flesh tones.

Too low a color temperature results in a loss of blue, green or blue/green colors in the picture thereby causing the objects to assume a reddish brown cast. This condition, however, is not nearly as objectionable as a loss of reds. Keep in mind that color temperature does not refer to brightness level.

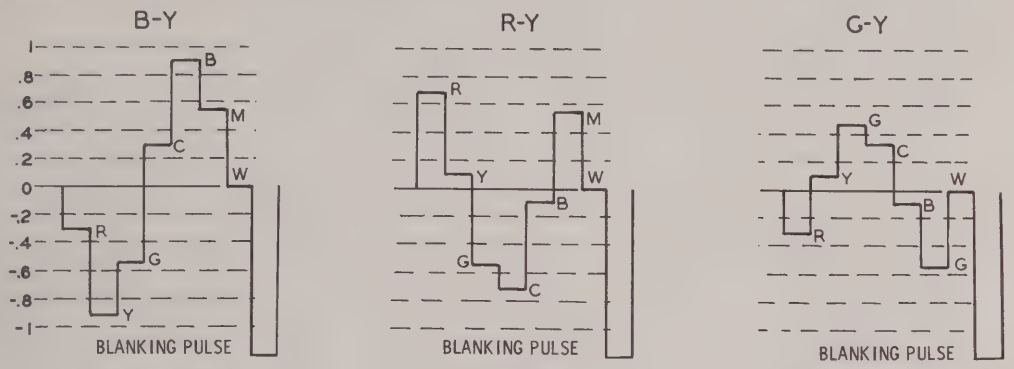
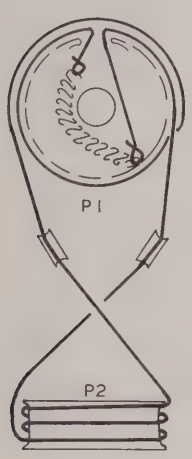
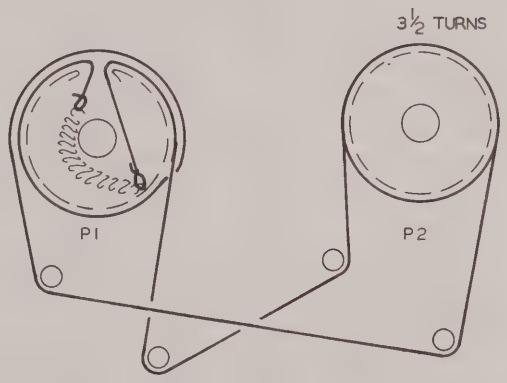



FIG. 14




TURN FINE TUNING SHAFT WITH PULLEY P1 FULLY CLOCKWISE




TURN FINE TUNING SHAFT WITH PULLEY P1 FULLY CLOCKWISE

# DIAL CORD STRINGING

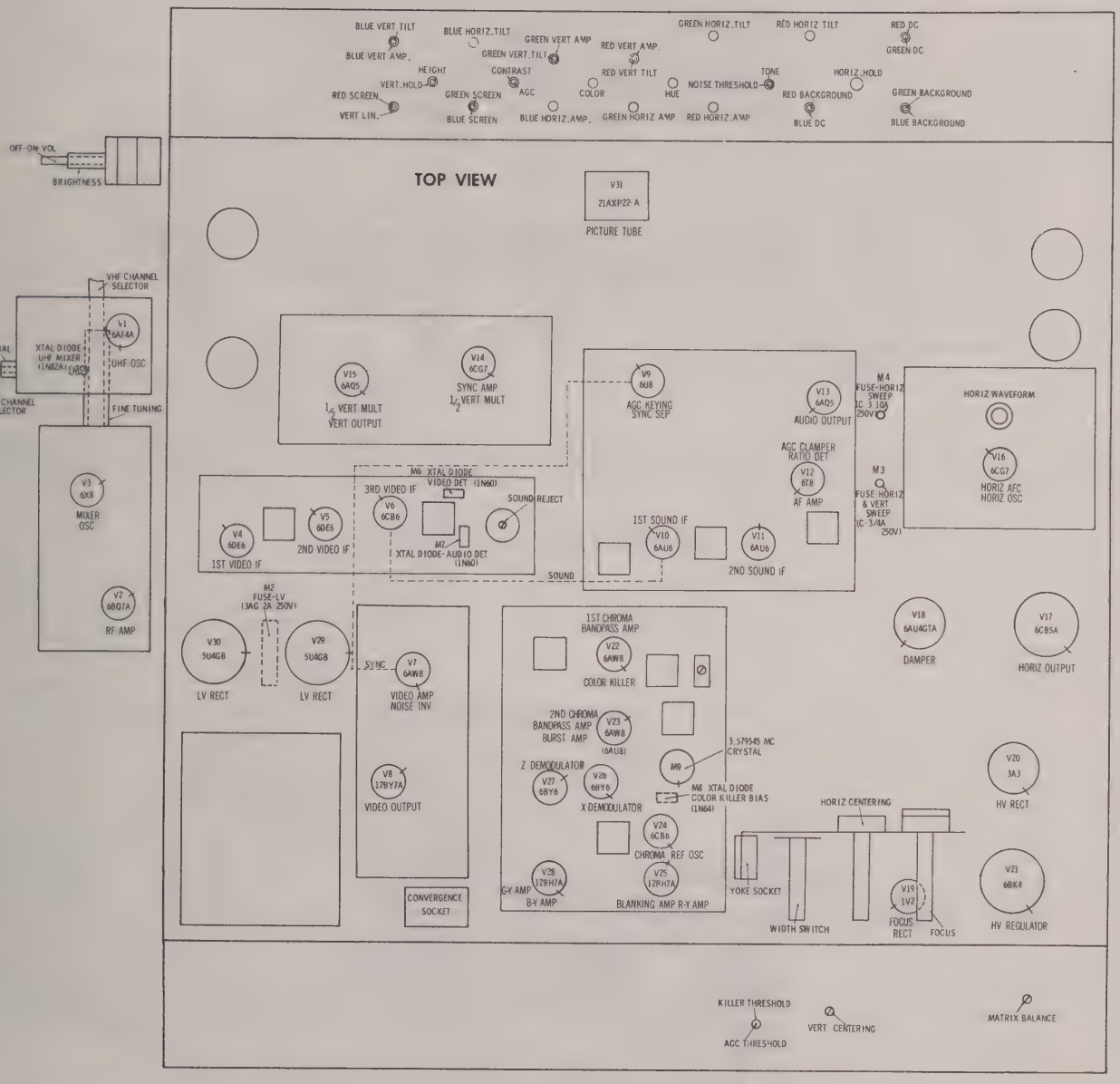
# RESISTANCE MEASUREMENTS

| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V1 | 6AF4A | *† 18K | 8000Ω | 0Ω | .1Ω | .1Ω | 8000Ω | *† 18K | | |
| V2 | 6BQ7A | † 2800Ω | 500K | 600K | 0Ω | .1Ω | 600K | 220K | 120Ω | 0Ω |
| V3 | 6X8 | 0Ω | 100K | † 14K | .1Ω | 0Ω | 0Ω | 100K | † 17K | † 17K |
| V4 | 6DE6 | 34K | 68Ω | 0Ω | .1Ω | † 5700Ω | † 5700Ω | 0Ω | | |
| V5 | 6DE6 | 35K | 68Ω | 0Ω | .1Ω | † 5700Ω | † 5700Ω | 0Ω | | |
| V6 | 6CB6 | .2Ω | 180Ω | .1Ω | 0Ω | ▪ 470Ω | ▪ 470Ω | 0Ω | | |
| V7 | 6AW8 | 1000Ω | • 780K | † 25K | 0Ω | .1Ω | 800Ω | 4600Ω | † 16K | † 7500Ω |
| V8 | 12BY7A | • 300Ω | •820K | 0Ω | 0Ω | 0Ω | .1Ω | † 4500Ω | † 23K | 0Ω |
| V9 | 6U8 | ▪1Meg | ▪ 33K | † 5400Ω | 0Ω | .1Ω | 250K | 60K | 0Ω | 2Meg |
| V10 | 6AU6 | 2.4Ω | 0Ω | .1Ω | 0Ω | ▪1800Ω | ▪ 1800Ω | 120Ω | | |
| V11 | 6AU6 | 120K | 0Ω | .1Ω | 0Ω | ▪ 4000Ω | ▪ 19K | 0Ω | | |
| V12 | 6T8 | INF | 27K | INF | .1Ω | 0Ω | † 220K | 0Ω | 10Meg | † 330K |
| V13 | 6AQ5 | 500K | ▪ 82Ω | .1Ω | 0Ω | † 1000Ω | † 490Ω | 500K | | |
| V14 | 6CG7 | ▪9500Ω | 33K | 0Ω | .1Ω | 0Ω | • ‡3Meg | • 2.3Meg | 0Ω | 0Ω |
| V15 | 6AQ5 | •1Meg | •30Ω | .1Ω | 0Ω | • † 3000Ω | • † 2700Ω | • 1Meg | | |
| V16 | 6CG7 | † 700Ω | 1.3Meg | 230K | .1Ω | 0Ω | † 39K | 250K | 0Ω | 0Ω |
| V17 | 6CB5A | † 10K | 0Ω | 22Ω | 500K | 500K | 22Ω | .1Ω | † 10K | TOP CAP ‡29Ω |
| V18 | 6AU4GTA | NC | NC | 150K | NC | † 42Ω | NC | 0Ω | .1Ω | |
| V19 | 1V2 | •‡33K | NC | NC | 30Meg | 30Meg | NC | NC | NC | • ‡33K |
| V20 | 3A3 | | PINS | 1 THRU 8 | HAVE | INF | RESISTANCE | | | TOP CAP ‡470Ω |
| V21 | 6BK4 | 100Meg | † 10K | NC | NC | 900K | NC | † 10K | NC | TOP CAP INF |
| V22 | 6AW8 | 0Ω | 3Meg | 950K | .1Ω | 0Ω | 0Ω | 3Meg | † 10K | † 10K |
| V23 | 6AW8 | 270Ω | •180Ω | † 22K | .1Ω | 0Ω | 0Ω | 680K | 3300Ω | † 1700Ω |
| V24 | 6CB6 | 68K | 0Ω | .1Ω | 0Ω | † 17K | † 47K | 0Ω | | |
| V25 | 12BH7A | † 10K | 1Meg | 390Ω | 0Ω | 0Ω | † 22K | 470K | 270Ω | .1Ω |
| V26 | 6BY6 | 470K | •500Ω | .1Ω | 0Ω | † 6300Ω | ▪ 100Ω | .2Ω | | |
| V27 | 6BY6 | 470K | •500Ω | .1Ω | 0Ω | † 6300Ω | ▪ 100Ω | .2Ω | | |
| V28 | 12BH7A | † 10K | 1Meg | 390Ω | 0Ω | 0Ω | † 10K | 1Meg | 390Ω | .1Ω |
| V29 | 5U4GB | NC | 20K | NC | 11Ω | NC | 9Ω | NC | 20K | |
| V30 | 5U4GB | NC | 20K | NC | 11Ω | NC | 9Ω | NC | 20K | |
| V31 | 21AXP22A | † 10K | 300K | † 270K | † 7800Ω | † 3500Ω | 280K | † 200K | NC | 30Meg |
| | | PIN 10 NC | PIN 11 † 100K | PIN 12 280K | PIN 13 † 2700Ω | PIN 14 † 10K | | | | |

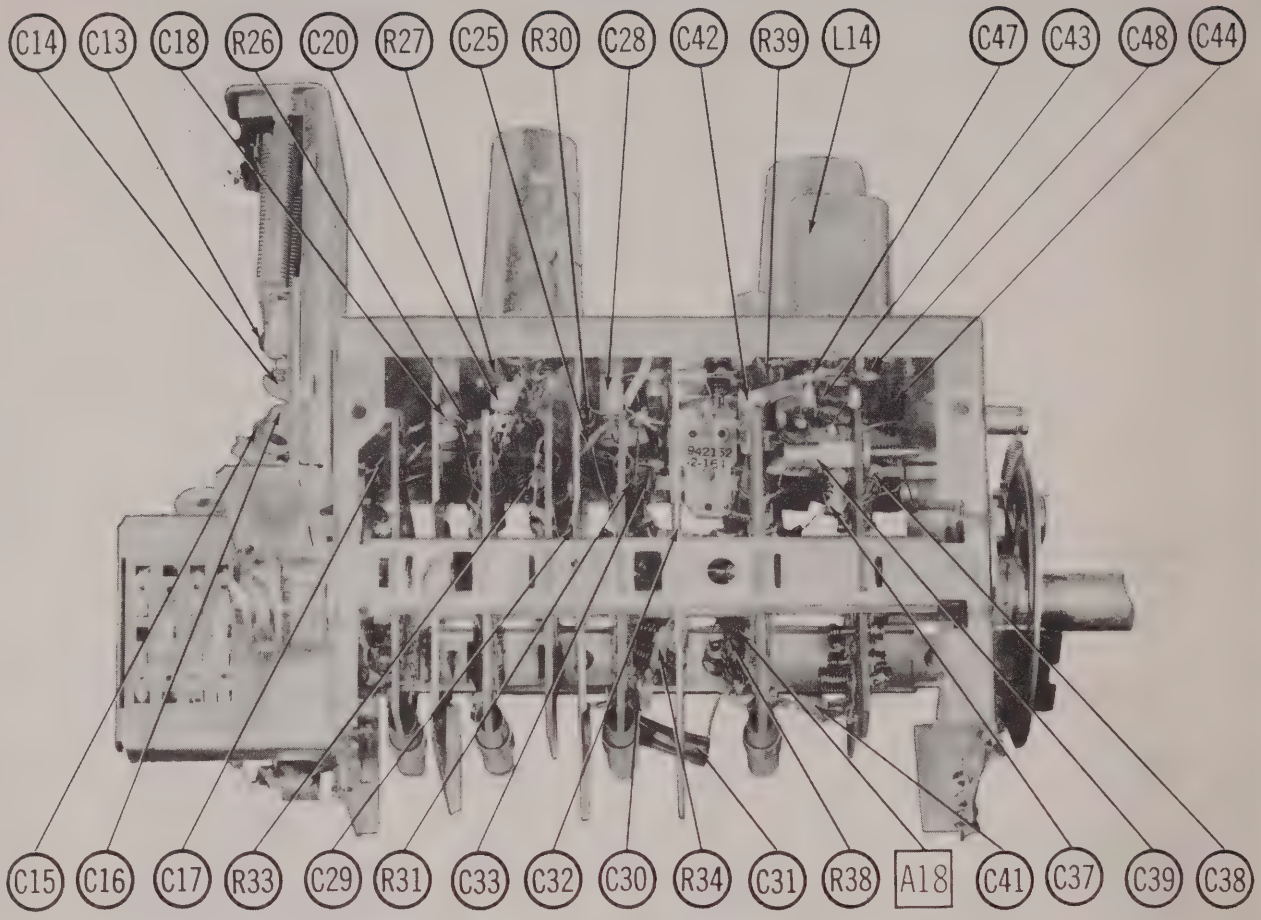
* MEASURED IN UHF POSITION
† MEASURED FROM PIN 2 OF V30.
▪ MEASURED FROM 140V SOURCE.
• THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION
‡ MEASURED FROM PIN 3 OF V18.
NC NO CONNECTION
TP TIE POINT

# TUBE PLACEMENT CHART

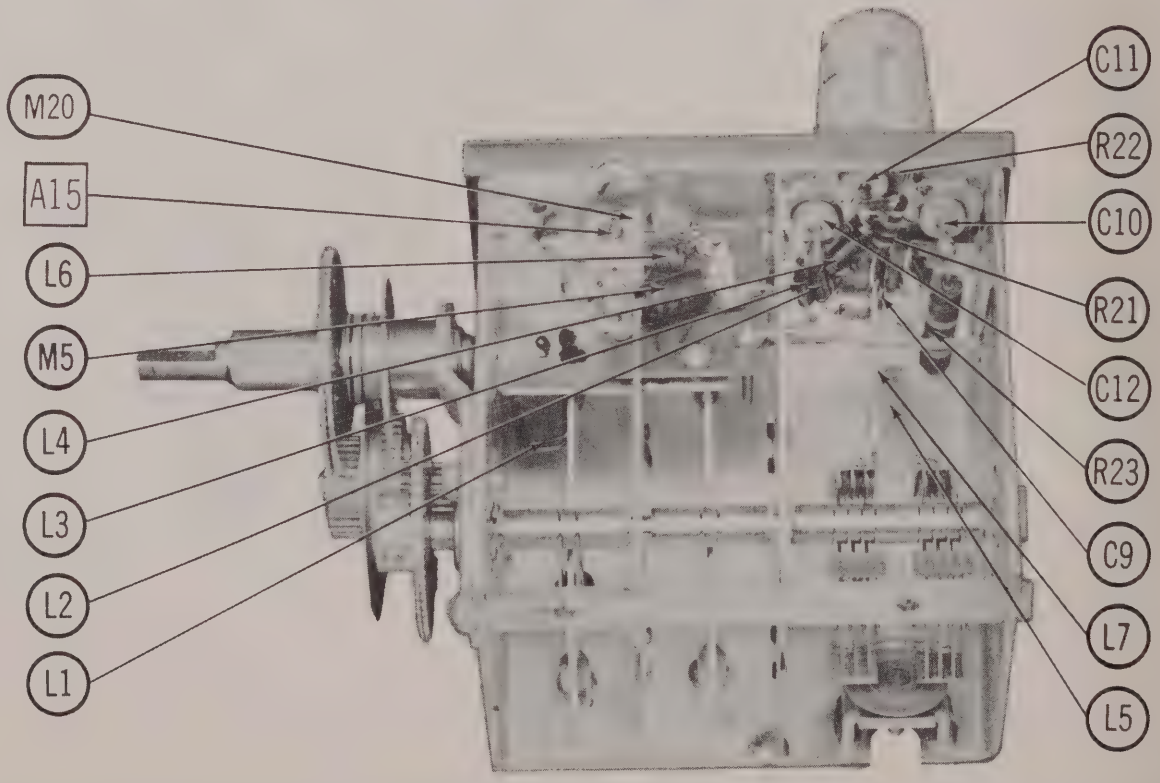
PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO




RCA VICTOR MODELS 21-CD-7895, U, 21-CD-7897, U, 21-CD-7915, U, 21-CD-7916, U, 21-CD-7917, U, 21-CD-7935, U, 21-CD-7936, U, 21-CD-7956, U, 21-CD-7958, U, 21-CD-7975, U, 21-CD-7996, U, 21-CD-7999, U (Ch. CTC5AA, AB, N, P, R, T, U, W)




**RF TUNER LEFT SIDE**

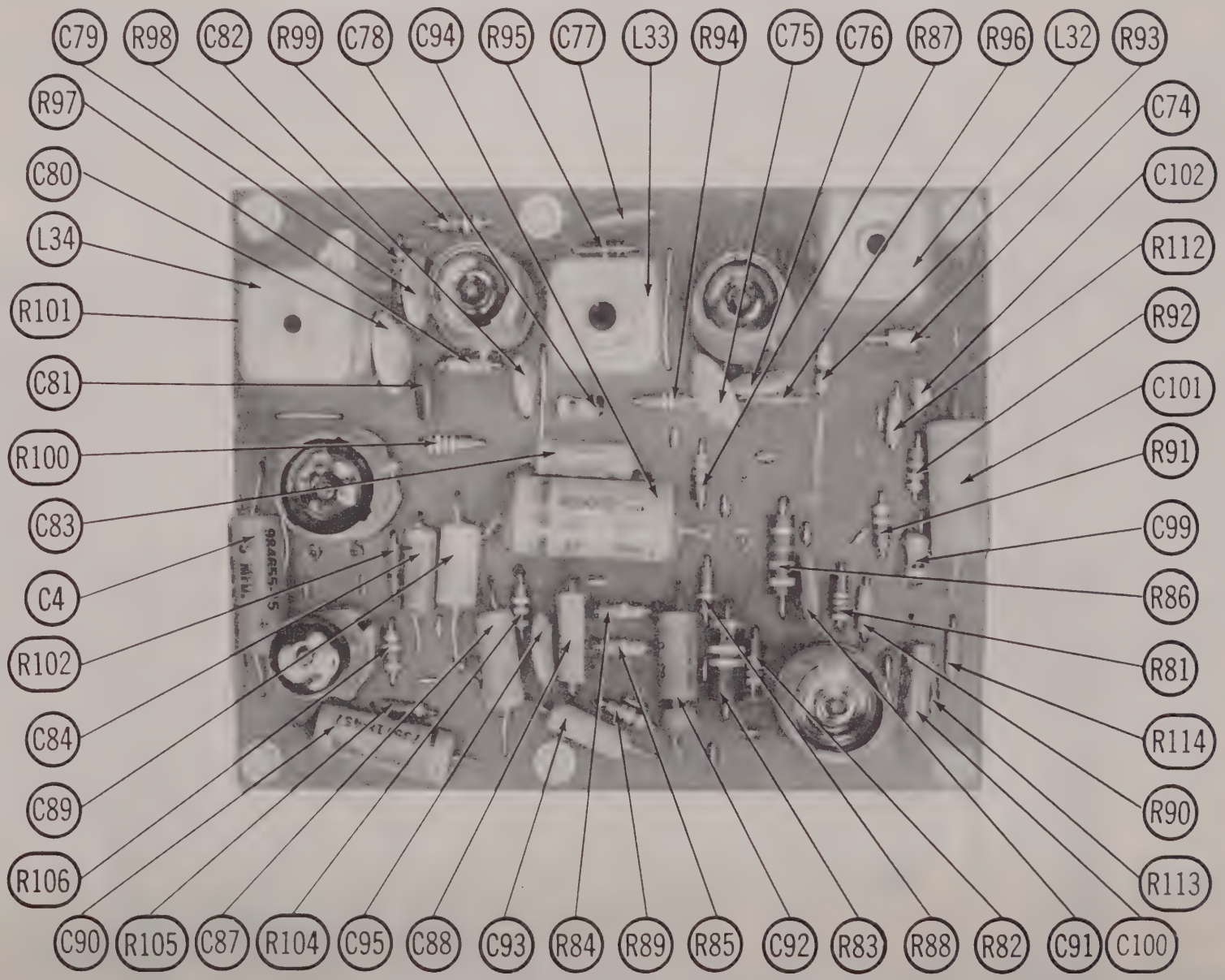



**UHF TUNER SIDE VIEW**

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

## CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

RCA VICTOR MODELS 21-CD-7613, U, 21-CD-7614, U, 21-CD-7615, U, 21-CD-7616, U, 21-CD-7617, U, 21-CD-7618, U, 21-CD-7619, U, 21-CD-7620, U, 21-CD-7621, U, 21-CD-7622, U, 21-CD-7623, U, 21-CD-7624, U, 21-CD-7625, U, 21-CD-7626, U, 21-CD-7627, U, 21-CD-7628, U, 21-CD-7629, U, 21-CD-7630, U, 21-CD-7631, U, 21-CD-7632, U,




SOUND AGC & SYNC PRINTED BOARD

# PARTS LIST AND DESCRIPTIONS

## TUBES ( GENERAL ELECTRIC, SYLVANIA)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | UHF Osc. | 6AF4A | |
| V2 | RF Amp. | 6BQ7A | |
| V3 | Mixer-Osc. | 6X8 | |
| V4 | 1st Video IF Amp. | 6DE6 | |
| V5 | 2nd Video IF Amp. | 6DE6 | |
| V6 | 3rd Video IF Amp. | 6CB6 | |
| V7 | Video Amp. -Noise Inverter | 6AW8 | |
| V8 | Video Output | 12BY7A | |
| V9 | AGC Keying-Sync Sep. | 6U8 | |
| V10 | 1st Sound IF Amp. | 6AU6 | |
| V11 | 2nd Sound IF Amp. | 6AU6 | |
| V12 | Ratio Det. -AGC Clamp. - AF Amp. | 6T8 | |
| V13 | Audio Output | 6AQ5 | |
| V14 | Sync Amp. -Vert. Mult. | 6CG7 | |
| V15 | Vert. Mult. -Vert. Output | 6AQ5 | |
| V16 | Horiz. AFC-Horiz. Osc. | 6CG7 | |
| V17 | Horiz. Output | 6CB5A | |
| V18 | Damper | 6AU4GTA | |
| V19 | Focus Rectifier | 1V2 | |
| V20 | HV Rectifier | 3A3 | |
| V21 | HV Regulator | 6BK4 | |
| V22 | 1st Chroma Bandpass Amp. - Color Killer | 6AW8 | |
| V23 | 2nd Chroma Bandpass Amp. - Burst Amp. | 6AW8 | Note 1 |
| V24 | Chroma Ref. Osc. | 6CB6 | |
| V25 | Blanking Amp. -R-Y Amp. | 12BH7A | |
| V26 | "X" Demodulator | 6BY6 | |
| V27 | "Z" Demodulator | 6BY6 | |
| V28 | G-Y Amp. - B-Y Amp. | 12BH7A | |
| V29 | LV Rectifier | 5U4GB | |
| V30 | LV Rectifier | 5U4GB | |

Note 1: A 6AU8 used in early versions.

## PICTURE TUBE

| ITEM No. | REPLACEMENT DATA | | | | NOTES |
|---|---|---|---|---|---|
| | RCA Victor PART No. | CBS PART No. | GENERAL ELECTRIC PART No. | SYLVANIA PART No. | |
| V31 | 21AXP22A | | | 21AXP22A<br>21AXP22 | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT. | RCA Victor PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A | ▲80 | 450 | 102786 | AFH2-94-45 | | | TMD-58 | | TVL-2720 |
| B | ▲40 | 200 | | | | | | | |
| C2A | ▲80 | 450 | 102786 | AFH2-94-45 | BO480 | FP264.5 | TMD-58 | D-255 | TVL-2720 |
| B | ▲40 | 200 | | | | | | | |
| C3A | ▲50 | 450 | 102161 | AFH3-154-40 | | FP240 | | T-760 | R2365 † |
| B | ▲50 | 350 | | | | TC70 | | MT-4504 | |
| C | ■5 | 450 | | | | | | | |
| C4 | 5 | 50 | 78943 | PRS50V5 | BBR5-50 | TC30 | TD-5-50 | MMT-0505 | TVA-1303 |
| C5A | ▲80 | 450 | 102786 | AFH2-94-45 | BO480 | FP264.5 | TMD-58 | T-742 | TVL-2720 |
| B | ▲40 | 200 | | | | | | | |
| C6 | 2 | 350 | 78920 | PRS450V2 | BR245 | TC60 | TD-2-450 | MT-4502 | TVA-1701 |
| C7 | 4 | 450 | 102843 | PRS450V4 | BR445 | TC70 | TD-4-450 | FM-4504 | TVA-1702 |
| C8 | 8 | 10VAC | 102847 | NP-PRS10 | BR202 * | TC108 | | MT-1516 * | R2201 † |
| | | | | VAC8 | BR202 | | | MT-1516 | |

① Connect negative leads together.
② Non-catalog item.

## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | RCA Victor PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C9 | .8-3.5 | | 79556 | | 829-4 | | 3115-E | CT551 | | |
| C10 | 1000 | | 79559 | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C11 | 1000 | | 79559 | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C12 | 1000 | | 79559 | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C13 | 18 | | | | | | | | | NP0 5% |
| C14 | 5 | | | | DD-050 | L10V5 | ED-5 | ZT-555 | 5GA-V5 | |
| C15 | 27 | | | BPD-000025 | DD-250 | L10Q27 | ED-27 | UC-5427 | 5GA-Q27 | |
| C16 | 33 | | | SI 33 | D6-330 | L10Q33 | ED-33 | UC-5433 | 5GA-Q33 | |
| C17 | 270 | | 77838 | SI 270 | DD-271 | L10T27 | ED-270 | UC-5327 | 5GA-T27 | |
| C18 | 1-4 | | 76532 | | 829-4 | | 3115-E | CT551 | | |
| C19 | 1000 | | 77252 | BPD-001 | DD-102 | BYA6D1 | ED-1000 | DC521 | 5HK-D1 | |
| C20 | 220 | | 100672 | BPD-0002 | DD-221 | L10T22 | ED-220 | UC-5322 | 5GA-T22 | |
| C21 | 1000 | | 77084 | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C22 | .47 | 200 | 101808 | P288N-47 | | CUB2P47 | | GEM-2047 | 2TM-P47 | |
| C23 | 220 | | 100672 | BPD-0002 | DD-221 | L10T22 | ED-220 | UC-5322 | 5GA-T22 | |
| C24 | 220 | | 100672 | BPD-0002 | DD-221 | L10T22 | ED-220 | UC-5322 | 5GA-T22 | |
| C25 | 1000 | | 77252 | BPD-001 | DD-102 | BYA6D1 | ED-1000 | DC521 | 5HK-D1 | |
| C26 | 10000 | | 73960 | BPD-01 | DD-103 | BYA6S1 | GP-10000 | DC511 | 5HK-S1 | |
| C27 | 470 | | 77293 | BPD-00047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C28 | .8-3 | | 77151 | | 829-4 | | 532-A | CT565A | | |
| C29 | 1000 | | 77252 | BPD-001 | DD-102 | BYA6D1 | ED-1000 | DC521 | 5HK-D1 | |
| C30 | .68 | | | | TCZ-R68 | C10V68C | TCO-.68 | | | |
| C31 | .68 | | 71504 | | TCZ-R68 | C10V68C | TCO-.68 | | | |
| C32 | 270 | | 77838 | SI 270 | DD-271 | L10T27 | ED-270 | UC-5327 | 5GA-T27 | |
| C33 | 1000 | | 77252 | BPD-001 | DD-102 | BYA6D1 | ED-1000 | DC521 | 5HK-D1 | |
| C34 | 10 | | 102305 | SI 10 | DD-100 | L10Q1 | ED-10 | UC-541 | 5GA-Q1 | |
| C35 | 47 | | 102882 | N750-SI 47 | TCN-47 | C10Q47U | TC7-47 | UC-5447 | 5GA-Q47 | N750 |
| C36 | .8-3 | | 77151 | | 829-4 | | 532-A | CT565A | | |
| C37 | 10 | | 102883 | SI 10 | DD-100 | L10Q1 | ED-10 | UC-541 | 5GA-Q1 | |
| C38 | 1.2 | | 78532 | NP0-SI 1 | | | | | | |
| C39 | .8-3 | | 77913 | | 829-3 | | 532-A | CT565A | | |
| C40 | 1000 | | 77084 | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C41 | .68 | | 71504 | | TCZ-R68 | | TCO-.68 | | | |
| C42 | 1-4 | | 100671 | | 829-4 | | 3115-E | CT551 | | |
| C43 | 47 | | 102882 | SI 47 | TCZ-47 | L10Q47 | ED-47 | | 5GA-Q56 | |
| C44 | 1000 | | 77084 | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C45 | 1000 | | 77084 | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C46 | 470 | | 77293 | BPD-00047 | DD-471 | BYA10T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C47 | 12 | | | BPD-00001 | DD-100 | L10Q12 | ED-12 | UC-5412 | 5GA-Q12 | |
| C48 | 2 | | 78047 | | | | | | | |
| C49 | 8 | | 103244 | | | | | | | N080 5% ① |
| C50 | 8 | | 103244 | | | | | | | N080 5% ② |
| C51 | 22 | | 100924 | N080-SI 22 | | | | | | N080 5% |
| C52 | 680 | | 102237 | | | | | | | N2200 10% |
| C53 | 1000 | | 78623 | BPD-001 | DD-102 | BYA6D1 | ED-1000 | DC521 | 5HK-D1 | |
| C54 | 680 | | | | | | | | | N2200 10% |
| C55 | 1000 | | 78623 | BPD-001 | DD-102 | BYA6D1 | ED-1000 | DC521 | 5HK-D1 | |

RCA VICTOR MODELS 21-CD-7895, U, 21-CD-7897, U, 21-CD-7915, U, 21-CD-7916, U, 21-CD-7917, U, 21-CD-7935, U, 21-CD-7936, U, 21-CD-7956, U, 21-CD-7958, U, 21-CD-7975, U, 21-CD-7996, U, 21-CD-7999, U, (Ch. CTC5AA, AB, N, P, R, T, U, W)

# CAPACITORS (cont)

| ITEM No. | RATING CAP | RATING VOLT | REPLACEMENT DATA: RCA Victor Part No. | AEROVOX Part No. | CENTRALAB Part No. | CORNELL DUBILIER Part No. | ERIE Part No. | MALLORY Part No. | SPRAGUE Part No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| C56 | 1000 | | 78633 | BPD-001 | DD-102 | BYA5GX | ED 1000 | DC5U | 5HK-DI | |
| C57 | .5 | | 78500 | WPG-511 5 | TCZ-1R5 | CSV5UC | TCO 1 5 | ZT 5S15 | 5TCCH-V15 | |
| C58 | 680 | | 102457 | | | | | | | N2200 10% |
| C59 | 1000 | | 102324 | BPD-001 | DD-102 | BYA5GI | ED-1000 | DC5U | 5HK-DI | |
| C60 | 1000 | | 78633 | BPD-001 | DD-102 | BYA5GX | ED-1000 | DC5U | 5HK-DI | |
| C61 | 10 | | 103205 | WT50-62 10 | TCH-10 | CSQ1U | TCT-10 | NT-5U | 5TCU-Q | N750 |
| C62 | 10 | | 103205 | WT50-62 10 | TCH-10 | CSQ1U | TCT-10 | NT-5U | 5TCU-Q | N750 |
| C63 | 22 | | 102789 | WP6-81 22 | D6-230 | LJ0G23 | ED-22 | UC-5423 | 5GA-G23 | |
| C64 | 560 | | 79980 | BPD-0068 | DD-681 | BYA1GT68 | ED-680 | UC-5368 | 5GA-T68 | |
| C65 | 3300 | | 103403 | BPD-0033 | DD-332 | BYA1G332 | GP-3300 | UC-5233 | 5GA-T33 | |
| C66 | .1 | 200 | 79251 | P388N-1 | DF-104 | CL1B2P1 | | | 4TM-P1 | |
| C67 | 22 | | | WP6-81 22 | TC7-22 | CSQ2C | TCC-22 | | TCC-Q22 | N750 |
| C68 | 330 | | 103399 | BPD-0033 | DD-331 | LJ0T33 | ED-330 | UC-5333 | 5GA T33 | |
| C69 | 22 | 200 | 100850 | P388N-22 | | CUB2P22 | | 2SM-J223 | 4TM-P22 | |
| C70 | 680 | | 79980 | BPD-0068 | DD-681 | BYA1GT68 | ED 680 | UC-5368 | 5GA-T68 | |
| C71 | 1300 | | 102173 | BPD-0022 | D6-222 | BYA1GD22 | GP 1200 | UC 5222 | 5HK-D22 | |
| C71A | 10000 | | 78777 | BPD-001 | DD-102 | BYA5GI | GP-10000 | DC5U | 5HK-DI | |
| | B 10000 | | | | | | GP-10000 | DC5U | | |
| C72 | .01 | 600 | 77434 | BPD-01 | DD-103 | CUB3EL | ED-01 | | 2TM-61 | |
| C74 | 4 7 | | 102325 | WP2-81 4 7 | TCE-4R7 | LJ0Y5 | TCO-4 7 | ZT-5S47 | 5GA-Y5 | |
| C75 | 2300 | | 102323 | BPD-0033 | D6-332 | BYA1G033 | GP-3300 | UC-5233 | 5HK-G33 | |
| C76 | 10000 | | 79980 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-DI | |
| C77 | 10000 | | 73960 | BPD-01 | DD-103 | | GP-10000 | DC5U | 5HK-DI | |
| C78 | .8 | | 102403 | | TCE-8R | CUB4MC | TCO-.8 | | | NP0 10% |
| C79 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP 10000 | DC5U | 5HK-DI | |
| C80 | 3300 | | 102323 | BPD-0033 | D6-332 | BYA1G033 | GP-3300 | UC-5233 | 5HK-G33 | |
| C81 | 1200 | | 102232 | BPD-001 | D6-122 | LJ0T12 | ED-1200 | UC 5212 | 5GA-T22 | |
| C82 | 2200 | | 102234 | BPD-001 | DD-102 | BYA5GI | ED-1000 | DC5J | 5HK-DI | |
| C83 | 0082 | 400 | 102218 | BPD-0068 | | | | DC5M | 4TM-68 | |
| C84 | 01 | 200 | 100000 | BPD-001 | DD-103 | CUB2EL | ED-01 | GEM-41 | 2TM-51 | |
| C85 | 0056 | 200 | | BPD-0047 | DD-353 | CUB3J06 | ED-0056 | GEM-235 | 6TM-56 | |
| C86 | 10000 | | 79560 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-DI | |
| C87 | 0047 | 600 | 102235 | BPD-0047 | D6-473 | CUB5MD47 | ED-000 | GEM-6347 | 6TM-47 | |
| C88 | 370 | | 73963 | 1469-00037 | | 5RST37 | | | 4TM-P1 | |
| C89 | 0027 | 500 | 101234 | BPD-0027 | D6-272 | CUB5D3 | ED-0027 | GEM-535 | 6TM-D3 | |
| C90 | 0033 | 1600 | 73819 | WYD-3U-3300 | | CUB5E33 | | GEM-6333 | 6TM-33 | |
| C91 | 10000 | | 79560 | BPD-01 | DD-103 | BYA5G | GP-10000 | DC5U | 5HK-DI | |
| C92 | 047 | 200 | 78921-A | BPD-05 | DF-503 | CUB2E47 | | GEM 4147 | 2TM-P47 | |
| C93 | 0022 | 400 | 102223 | BPD-0022 | D6-222 | CUB4D22 | ED-0022 | GEM-4222 | 6TM-D22 | |
| C94 | 47 | 200 | 102228 | P388N-47 | | CUB2P47 | | GEM-3047 | 2TM-P47 | |
| C95 | 0000 | | 73960 | BPD-01 | DD-103 | BYA5GL | GP-10000 | DC5U | 5HK-SI | |
| C96 | 10000 | | 73560 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-DI | |
| C97 | 0000 | | 78623 | BPD-001 | DD-102 | BYA5GI | ED-1000 | DC5U | 5HK-DI | |
| C98 | 1000 | | 78623 | BPD-001 | DD-102 | BYA5GI | ED-1000 | DC5U | 5HK-DI | |
| C99 | 56 | | 102307 | | | | | | | |
| C100 | 330 | | 102239 | 1469-00033 | | 5RST33 | | | M3-333 | |
| C101 | 1 | 400 | 73483 | P388N-1 | DF-104 | CUB4P1 | | GEM-401 | 4TM-P1 | 10% |
| C102 | 330 | | 73940 | 1469-00033 | DF-331 | 5RST37 | ED-330 | | 4TM-P1 | 10% |
| C103 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C104 | 033 | 600 | 100369 | BPD-033 | DF-333 | CUB5E33 | | GEM-6333 | 6TM-33 | |
| C105 | 220 | | 102228 | DI -00032 | D6-221 | LJ0T22 | ED-220 | UC-5322 | 5GA-T22 | |
| C106 | 1000 | | 78623 | BPD-001 | DD-102 | BYA5GI | ED-1000 | DC5U | 5HK-DI | |
| C107 | 0039 | 400 | 102218 | BPD-0033 | D6-473 | CUB4D4 | ED-004 | GEM-424 | 6TM-D4 | |
| C108 | 01 | 200 | 102220 | BPD-01 | DD-103 | CUB2EI | ED-01 | GEM-41 | 2TM-51 | |
| C109 | 033 | 600 | 102227 | BPD-03 | DF-305 | CUB5E33 | | GEM-6333 | 6TM-S33 | |
| C110 | 33 | 200 | 102215 | P388N-33 | | | | GEM-3033 | | |
| C111 | 056 | | 103504 | BPD-08 | DF-509 | CUB5E85 | | GEM-6356 | 6TM-65 | |
| C113 | 12 | 600 | 103178 | P668N-1 | | CUB6P1 | | GEM-601 | 6TM-P1 | |
| C113 | 0015 | 600 | 102205 | BPD-002 | D6-152 | CUB4D15 | ED-0015 | GEM-4215 | 6TM-D15 | |
| C114 | 0027 | 600 | 73818 | BPD-0027 | D6-272 | CUB5E28 | ED-0027 | GEM-6235 | 6TM-D3 | |
| C115 | 82 | | 100369 | | | | | | | 10% |
| C116 | 12 | | 102836 | | TCM-15 | CSQC2U | TCT-15 | | | N750 5% |
| C117 | 82 | | 102205 | | TCH-82 | CUQW2U | TCT-82 | | | N750 |
| C118 | 047 | 400 | 77434 | BPD-05 | DF-503 | CUB4D47 | | GEM-4147 | 4TM-S47 | |
| C120 | 01 | 200 | 77434 | BPD-01 | DD-103 | CUB2EI | ED-01 | GEM-41 | 2TM-51 | |
| C121 | 47 | 200 | 100399 | P388N-47 | | CUB2P5 | | GEM-3047 | 2TM-P47 | |
| C122 | 330 | 1000 | 78476 | | | | | | | 5% ① |
| C123 | 500 | | 78704 | BPD-01 | DD-103 | CUB5EI | ED-01 | GEM-61 | 6TM-51 | |
| C124 | 01 | 200 | 77434 | BPD-01 | DD-103 | CUB2EI | ED-01 | GEM-41 | 2TM-51 | |
| C125 | 01 | 600 | 102232 | 1464-0001 | | 5HSDI | | MC5E-251 | M5-J2 | 5% ② |
| C126 | 500 | | 78704 | P388N-22 | | CUB3P22 | | GEM-4223 | 6TM-P22 | |
| C127 | 1 | 600 | 102178 | P668N-1 | DF-104 | CUB6P1 | | GEM-601 | 6TM-P1 | |
| C127 | 1 | 600 | 102178 | P668N-22 | | CUB6P22 | | GEM-6223 | 6TM-P22 | |
| C128 | 15 | 500 | 102191 | P668N-15 | | CUB6P1 | | GEM-5051 | 6TM-P15 | |
| C129 | 1 | 600 | 102178 | P668N-1 | DF-104 | CUB6P1 | | GEM-601 | 6TM-P1 | |
| C130 | 47 | 200 | 79148 | P388N-47 | | CUB2P47 | | GEM-2047 | 2TM-P47 | |
| C131 | 47 | 300 | 78148 | P388N-47 | | CUBAP47 | | GEM-3047 | 2TM-P47 | |
| C132 | 350 | 1000 | 102791 | | | | | | | 10% |
| C133 | 360 | 3000 | 103795 | | | | | | | 10% |
| C134 | 56 | 4000 | 102790 | | | | | | | |
| C135 | 0033 | 600 | 102174 | BPD-0033 | D6-332 | CUB6D33 | | GEM-6233 | 6TM-D33 | |
| C136 | 01 | 600 | 78623 | BPD-00047 | DD-471 | BYA1GT47 | ED-470 | UC-5347 | 5GA-T47 | |
| C137 | 82 | 5000 | | | | | | | | |
| C138 | 82 | | | | TCN-82 | CUQN2U | TCT-82 | | | N750 10% ③ |
| C139 | 47 | | 103343 | | TCN-47 | CUQG1U | TCT-47 | | | N750 10% ③ |
| C140 | 680 | | 102231 | BPD-00068 | DD-681 | BYA1GT68 | ED-680 | UC-5368 | 5GA-T68 | |
| C141 | 1 | 300 | 79251 | P388N-1 | DF-104 | CUB3P1 | | GEM-301 | 3TM-P1 | |
| C142 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C143 | 10000 | | | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C144 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C145 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C146 | 1 | 300 | | P388N-1 | DF-104 | CUB3P1 | | GEM-301 | 3TM-P1 | |
| C147 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C148 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C149 | 470 | | 78823 | DI -00047 | DD-471 | LJ0T47 | ED-470 | UC-5347 | 5GA-T47 | |
| C150 | 100 | | 102206 | WT50-61 100 | TCH-100 | CUQ1U | TCT-100 | NT-5U | 5TCU-Q | N750 10% |
| C151 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C152 | 2 | | 78047 | | | | | | | M2500 5% |
| C153 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C154 | 8 | | 102203 | | | | | | | |
| C155 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C156 | 10000 | | 73960 | BPD-01 | DD-103 | BYA5GI | GP-10000 | DC5U | 5HK-SI | |
| C157 | 330 | | 102239 | DI -00033 | D6-331 | LJ0T33 | ED-330 | UC-5333 | 5GA-T33 | 10% |
| C158 | 10 | | 102205 | WT50-81 10 | TCH-10 | CUQU | TCT-10 | NT-5U | 5TCU-Q | N750 10% |
| C159 | 1000 | | 102234 | DI -001 | DD-102 | BYA5GI | ED-1000 | DC5U | 5HK-DI | ④ 10% |
| C160 | 10 | | 102206 | WT50-81 10 | TCH-10 | CUQU | TCT-10 | NT-5U | 5TCU-Q | N750 10% |
| C161 | 1000 | | 78623 | DI -001 | DD-102 | BYA5GI | ED-1000 | DC5U | 5HK-DI | |
| C162 | 047 | 400 | 78921-A | BPD-05 | DF-503 | CUB4E47 | | GEM-4147 | 4TM-S47 | |
| C163 | 047 | 400 | 78921-A | BPD-05 | DF-503 | CUB4E47 | | GEM-4147 | 4TM-S47 | |
| C164 | 047 | 400 | 78921-A | BPD-05 | DF-503 | CUB4E47 | | GEM-4147 | 4TM-S47 | |
| C165 | 047 | 400 | 78921-A | BPD-05 | DF-503 | CUB4E47 | | GEM-4147 | 4TM-S47 | |
| C166 | 047 | 400 | 78921-A | BPD-05 | DF-503 | CUB4E47 | | GEM-4147 | 4TM-S47 | |
| C167 | 047 | 600 | 78921-A | BPD-06 | DF-508 | CUB4E47 | | GEM-4147 | 4TM-S47 | |
| C168 | 47 | 300 | 79148 | P388N-47 | | CUB2P47 | | GEM-3047 | 2TM-P47 | |
| C169 | 39 | 200 | 102179 | | | | | | | |
| C170 | 39 | 300 | 102179 | | | | | | | |

# PARTS LIST AND DESCRIPTIONS (Continued)

## CAPACITORS (cont)

| ITEM No. | RATING CAP | RATING VOLT | REPLACEMENT DATA: RCA Victor Part No. | AEROVOX Part No. | CENTRALAB Part No. | CORNELL DUBILIER Part No. | ERIE Part No. | MALLORY Part No. | SPRAGUE Part No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| C171 | 47 | 200 | 79148 | P388N-47 | | CUB2P47 | | GEM-2047 | 2TM-P47 | |
| C172 | 047 | 600 | 102172 | BPD-05 | DF-505 | CUB5E47 | | GEM-6147 | 6TM-S47 | |
| C173 | 047 | 500 | 73592 | BPD-05 | DF-503 | CUB5E47 | | GEM-6147 | 6TM-S47 | |
| C174 | 1 | | | | | | | | | M3300 ⑤ |
| C175 | 1.5 | | | | | | | | | M3300 ⑤ |
| C176 | 3.3 | | | | | | | | | M3300 ⑤ |
| C177 | 51 | | | | | | | | | M50 ⑤ |

① Some versions use a 5 5MMF in this application (Part #102316).
② Some versions use a 56MMF in this application (Part #55325).
Not used in some versions
Some versions use a 470MMF ± 5000% in this application (Part #78579)
Some versions use a 39MMF ± in this application. (Part #102964)

## CONTROLS

| ITEM No. | RATING RESIST. OHMS | RATING WATTS | REPLACEMENT DATA: RCA Victor Part No. | CENTRALAB Part No. | CLAROSTAT Part No. | IRC Part No. | MALLORY Part No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| R1A | 250K | 1 | 102156 | F1-254 | | | UF254 | Brightness |
| B | 250K | 1 | | R2-57 | | | UR1T254 | Volume - Tap @ 250 K |
| C | Switch | | | S1-51 | | | US-261 | |
| R2A | 2.5Meg | 1 | 103146 | F1-46 | | | UE-3U01 | Vert. Hold |
| B | 5Meg | | | R2-83 | | | Not Req. | Height |
| R3A | 5000 | 1 | 103151 | F1-51 | | | UE-77 | Contrast |
| B | 500K | | | R2-40 | | | Not Req. | AGC |
| R4 | 500Ω | | 102155 | F1-U | | | | Color |
| R5 | 500Ω | | 103977 | F1-U | | | | Hue |
| R6A | 2.5Meg | | 103154 | F1-76 | | | UE-3U53 | Tone |
| B | 2.5Meg | | | R2-76 | | | Not Req. | Noise Threshold |
| R7A | 2.5Meg | | 102144 | F1-76 | | | UE-3U51 | Vert. Lin. |
| B | 1Meg | | | R2-51 | | | Not Req. | Hold Screen |
| R8A | 1Meg | | 103143 | F1-51 | | | UE-1881 | Blue Screen |
| B | 1Meg | | | R2-51 | | | Not Req. | Green Screen |
| R9A | 1000 | | 103141 | | | | UE-76 | Focus - Tap @ 35Ω-Note 1 |
| B | 2Meg | | | | | | Not Req. | Red Background - Note 1 |
| R10A | 2Meg | | 103145 | F1-67 | | | UE-1872 | Blue Background |
| B | 2Meg | | | R2-67 | | | Not Req. | Green Background |
| R11A | 1000 | | 103143 | | | | UE-76 | Blue Vert. Amp. |
| B | 1000 | | | | | | Not Req. | Blue Vert. Tilt |
| R12A | 100Ω | | 103142 | | | | UE-76 | Green Vert. Amp. |
| B | 100Ω | | | | | | Not Req. | Green Vert. Tilt |
| R13A | 100Ω | | 103142 | | | | UE-76 | Red Vert. Amp |
| B | 100Ω | | | | | | Not Req. | Red Vert. Tilt |
| R14A | 100Ω | | 103140 | | | | UE-76 | Red DC - Tap @ 75Ω |
| B | 100Ω | | | | | | Not Req. | Green DC - Tap @ 78Ω |
| R15A | 150Ω | 2 | 102340 | AB-2 | | | | Matrix Balance - Note 2 |
| B | Shaft | | | AK-1 | | | | |
| R16 | 10Ω | 4 | 103149 | F1-U6 | A10-40 | WP840 | M40PK | Vert. Centering (Wire-wound) |
| R17A | 2.5Meg | 1 | 103158 | F1-76 | | | UE-3U55 | Killer Threshold |
| B | 2.5Meg | | | R2-76 | | | Not Req. | AGC Threshold |
| R18 | 300K | 1 | 102150 | | | | | Focus |
| R19 | 100Ω | 1 | 103149 | | | | U-1 | Horiz. Centering |
| R20 | 300Ω | 1 | | | | | | Sound Reject |

Note 1: In early versions R9B is a blue lateral control and part of control part #103247.
Note 2: R15 not used in some versions.

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING OHMS | RATING WATTS | REPLACEMENT DATA: RCA Victor Part No. | IRC Part No. | NOTES |
|---|---|---|---|---|---|
| R31 | 47000 | | 102247 | BTS-4700 | |
| R32 | 33000 | | 102233 | BTS-3300 | |
| R33 | 68000 | 1 | 102288 | BTA-6800 | |
| R34 | 10000 | | 102210 | BTS-100 | |
| R35 | 10K | | 102310 | BTS-10K | |
| R36 | 1200 | | 102213 | BTS-120 | |
| R37 | 10000 | | 102210 | BTS-100 | |
| R38 | 100K | | 102410 | BTS-100K | |
| R39 | 1Meg | | 102510 | BTS-1Meg | |
| R40 | 1Meg | | 102510 | BTS-1Meg | |
| R41 | 10000 | | 102210 | BTS-100 | |
| R42 | 47000 | | 102247 | BTS-4700 | |
| R43 | 10000 | | 102210 | BTS-100 | |
| R44 | 47000 | | 102247 | BTS-4700 | |
| R45 | 100K 5% | 1 | 102410 | BTA-100K 5% | |
| R46 | 1Meg | | 102510 | BTS-1Meg | |
| R47 | 68K | | 102368 | | |
| R48 | 47000 | | 102247 | BTS-4700 | |
| R49 | 1200 | | 102213 | BTS-120 | |
| R50 | 560 | | 102056 | BTS-56 | |
| R51 | 10K | 10 | 102310 | PW10-10K | |
| R52 | 10Meg | 2 | 103810 | BTB-10Meg | |
| R53 | 10Meg | 2 | 102610 | BTB-10Meg | |
| R54 | 10Meg | 2 | 102810 | BTB 10Meg | |
| R55 | 1Meg | 2 | 102510 | BTB-1Meg | |
| R56 | 1Meg | 2 | 102510 | BTB-1Meg | |
| R57 | 10K | | 102310 | BTS-10K | |
| R58 | 1 5Meg | 1 | 102515 | BTA-1 5Meg 5% | |
| R59 | 1 8Meg | 1 | 102518 | BTA-1 8Meg 5% | |
| R60 | 1000Meg | 1 | 514710 | | |
| R61 | 47000 | 1 | 102247 | BTA-4700 | |
| R62 | 820 | | 102082 | BTS-82 | Note 9 |
| R63 | 2200 | 2 | 102322 | | |
| R64 | 330 | 2 | 102233 | | |
| R65 | 220 | 2 | 102222 | | Note 10 |
| R66 | 100K | 2 | 102410 | BTB-100K | |
| R67 | 100K | 2 | 102410 | BTB-100K | |
| R68 | 100K | 2 | 102410 | BTB-100K | |
| R69 | 68000 | 7 | 102171 | | |
| R70 | 0010 | 5% | 102171 | BTS-9100 5% | Note 11 |
| R71 | 68000 | | 102268 | | |
| R72 | 10K | | 102268 | PW10-10K | Note 12 |
| R173 | 82K | 2 | 523282 | | Note 4 |

# RESISTORS (cont)

| ITEM No. | RATING OHMS | RATING WATTS | REPLACEMENT DATA: RCA Victor Part No. | IRC Part No. | NOTES |
|---|---|---|---|---|---|
| R174 | 680K | | 502489 | | |
| R175 | 33000 | | 502233 | BTS-3300 | |
| R176 | 3900 | | 502139 | | |
| R177 | 5600 5% | | 522156 | BTS-560 5% | Note 13 |
| R178 | 15000 | | | | Note 4 |
| R179 | 1000 | | 502110 | BTS-100 | |
| R180 | 22K | 2 | 522322 | | |
| R181 | 2700 5% | | 502127 | BTS-270 5% | |
| R182 | 3900 5% | | 502139 | BTS-390 5% | Note 14 |
| R183 | 560 | | 502056 | | |
| R184 | 6800 5% | | 502268 | | |
| R185 | 56000 5% | | 502256 | BTS-5600 5% | |
| R186 | 4700 5% | | 502147 | BTS-470 5% | Note 4 |
| R187 | 56000 5% | | 502256 | BTS-5600 5% | |
| R188 | 1000 | | 502110 | BTS-100 | |
| R189 | 4700 5% | | 502147 | BTS-470 5% | Note 15 |
| R190 | 1Meg | | 502510 | | |
| R191 | 2 2Meg | | 502522 | | |
| R192 | 100Ω | | 502010 | | |
| R193 | 68K | | 502368 | | |
| R194 | 1000Ω | | 502210 | BTS-1000 | |
| R195 | 47K | 1 | 502347 | BTS-47K | |
| R196 | 470K | | 502447 | | |
| R197 | 470K | | 502447 | BTS-470K | |
| R198 | 22K | | 502322 | | |
| R199 | 22K | 2 | 522322 | | |
| R200 | 33000 | | 502333 | BTS-3300 | Note 4 |
| R201 | 56K 5% | | 502356 | | Note 4 |
| R202 | 100Ω | | 502010 | | |
| R203 | 68K | | 502368 | | |
| R204 | 1000Ω | | 502210 | BTS-1000 | |
| R205 | 47K | 1 | 502347 | BTA-47K | |
| R206 | 3300 5% | | 502333 | | |
| R207 | 5600 5% | | 502256 | BTS-5600 5% | |
| R208 | 1Meg | | 502510 | BTS-1Meg | |
| R209 | 10K | 10 | 102410 | PW10-10K | |
| R210 | 390K | | 502439 | | |
| R211 | 1Meg | | 502510 | | Note 17 |
| R212 | 1Meg | | 502510 | BTS-1Meg | |
| R213 | 10K | 10 | 102241 | PW10-10K | |
| R214 | 390K | | 502439 | | |
| R215 | 1Meg | | 502510 | | Note 17 |
| R216 | 1Meg | | 502510 | BTS-1Meg | |
| R217 | 10K | 10 | 102241 | PW10-10K | |
| R218 | 390K | | 502439 | | |
| R219 | 1Meg | | 502510 | | Note 17 |
| R220 | 3900 5% | 3 | 523139 | | Note 18 |
| R221 | 2 2Meg | | 502527 | BTS-2Meg 5% | |
| R222 | 120K 5% | 3 | 523413 | | Note 19 |
| R223 | 2700Ω | | 502127 | | |
| R224 | 1500Ω | 10 | 102169 | PW10-1500 | |
| R225 | 1500Ω | 10 | 102169 | PW10-1500 | |
| R226 | 10K | 1 | 523310 | BTA-10K | |
| R227 | 56K | | 502356 | BTS-56K | |
| R228 | 56K | | 502356 | BTS-56K | |

Note 1: A 27000 resistor (#502327) used in late versions.
Note 2: A 1000Ω (#502310) or a 100Ω (#502100) may be used in some versions.
Note 3: A 33K resistor (#502333) used in early versions.
Note 4: Not used in some versions.
Note 5: A 6200 5% 1 W resistor (#523182) used in some versions.
Note 6 A 2.7Meg (#502527) or a 560K (#502456) may be used in some versions.
Note 7: In some versions this resistor is omitted, in some versions a 3.9Meg (#502539) is used.
Note 8: Some versions may use a 150K 1 W (#524215), a 120K 1 W (#523412) or a 100K 1 W (#523410) in this application.
Note 9: A 150 resistor (#502015) used in early versions.
Note 10: A 220 2 W resistor (#523222) used in some versions.
Note 11: A 10K 5% resistor (#502310) used in early versions.
Note 12: A 68000 5% W resistor (#102171) used in some versions.
Note 13: Some versions may use a 470Ω (#502147) or a 390Ω (#502139) in this application.
Note 14: A 4700 5% resistor (#502147) used in some versions.
Note 15: A 2700 resistor (#502127) used in early versions.
Note 16: A 47K resistor (#502347) used in early versions.
Note 17: A 1 5Meg resistor (#502515) used in early versions.
Note 18: A 5600 5% 2 W resistor (#522156) used in early versions.
Note 19: Was a 1 W resistor instead of a 2W. (Use a 2W resistor in all versions.)

## TRANSFORMER (POWER)

| ITEM No. | RATING PRI. | SEC 1 | SEC 2 | SEC 3 | REPLACEMENT DATA: RCA Victor Part No. | Hallderson Part No. | Merit Part No. | Stancor Part No. | Thordarson Part No. | Triad Part No. |
|---|---|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC @ 79A | 685VCT @ 480A | 5V @ 6A | 6.3V @ 2A SEC. 4 5V @ 4.4A | 102834 | | | | | |

## TRANSFORMERS (SWEEP CIRCUITS)

| ITEM No. | USE | REPLACEMENT DATA: RCA Victor Part No. | Hallderson Part No. | Merit Part No. | RCA TYPE No. | Rom Part No. | Stancor Part No. | Thordarson Part No. | Triad Part No. |
|---|---|---|---|---|---|---|---|---|---|
| T2 | Horiz. Output Trans | 102132 | | | | | | | |
| T3 | Horiz. Driver Trans | 102133 | | | | | | | |
| T4A | Yoke (Horiz. Il. 8Mil) | 102285 ① | | | | | | | |
| B | (Vert. 18Mil) | 51209 ② | | | | | | | |
| T5 | Horiz. Linearity Coil (.5-4.1 2MΩ) | 102137 | | | | | | | |
| T6 | Width Choke ( 36Mil) | 102181 | | | | | | | |
| T7 | Green Horiz. Amp. Coil | 102138 | RF803 | MWC-10 ③ | 20R4 | WC-7 | WC-16 | WC-12 ③ | |
| T8 | Blue Horiz. Amp Coil | 102139 | RF803 | MWC-10 ③ | 20R4 | WC-7 | WC-16 | WC-12 ③ | |
| T9 | Red Horiz. Amp Coil | 102139 | RF803 | MWC-10 ③ | 20R4 | WC-7 | WC-16 | WC-12 ③ | |
| T10 | Green Horiz. Tilt Coil | 102139 | | | | | | | |
| T11 | Blue Horiz. Tilt Coil | 102139 | | | | | | | |
| T12 | Red Horiz. Tilt Coil | 102139 | | | | | | | |
| T13 | Convergence Yoke Assy | 102295 ④ | | | | | | | |

① Includes resistors R135, R136, capacitor C137 and yoke plug
② Yoke plug.
③ Use red and blue terminals.
④ Use red and green terminals.
⑤ Includes convergence yoke assembly plug (Part #102371).





RCA VICTOR MODELS 21-CD-7895, U, 21-CD-7897, U, 21-CD-7915, U, 21-CD-7916, U, 21-CD-7917, U, 21-CD-7933, U, 21-CD-7935, U, 21-CD-7936, U, 21-CD-7938, U, 21-CD-7973, U, 21-CD-7996, U, 21-CD-7999, U (Ch. CTC54A, AB, N, P, R, T, U, W)

# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | RCA Victor PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T14 | 8200Ω | 3-4Ω | 77821 | Z1006 | A-2901① | A-3823 ① | 24S61 | S-53X ① | ① Tape center tap on primary winding. |

## SPEAKER

| ITEM No. | TYPE | | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|
| | SIZE | FIELD | V. C. IMP. | RCA Victor PART No. | QUAM PART No. | |
| SP1 | 8" | PM | 3-4Ω | 74664 ① | 8A21 ① | ① Parallel and phase |
| SP2 | 3½" | PM | 9Ω | 102119 ① | 3A15TZ9 ① | |
| SP3 | 3½" | PM | 9Ω | 102119 ① | 3A1 ① | |

## COILS (RF-IF)

| ITEM No. | USE | RCA Victor PART No. | NOTES |
|---|---|---|---|
| L1 | UHF Ant. Coil | 79564 | |
| L2 | Fil. Choke | 79565 | |
| L3 | Fil. Choke | 79565 | |
| L4 | Cathode Choke | 79565 | |
| L5 | UHF Osc. Coil | 79566 | |
| L6 | UHF IF Coil | 79567 | |
| L7 | UHF Osc. Coil | 79557 | Includes C9 |
| L8 | VHF Ant. Coils | 100697 | Includes stator complete with rotor;R24 & C17 |
| L9 | UHF IF Coil | 100677 | Wafer ass'y. #100696. Includes stator complete with rotor; R33 & C29. |
| L10 | Neutralizing Coils | 100698 | Includes stator complete with rotor and C19. |
| L11 | VHF RF Coils | 100694 | Includes stator complete with rotor;C32, C29, C33, C25, R31, R24 & R34. |
| L12 | VHF Mixer Grid Coils | 100695 | Includes stator complete with rotor; C17, C32, C41, C31, C48, R35, R36, R37 & R38. |
| L13 | VHF Osc. Coils | 1002881 | Includes stator complete with rotor; C39, C37, C35. |
| L14 | Conv. Plate Trans. | 102302 | |

| ITEM No. | USE | REPLACEMENT DATA | | | | NOTES |
|---|---|---|---|---|---|---|
| | | RCA Victor PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | |
| L15 | 41.25MC Trap | 102135 | | | | |
| L16 | 47.25MC Trap | 102136 | | | | |
| L17 | 1st Video IF | 102257 | | | | |
| L18 | 2nd Video IF | 102262 | | | | |
| L19 | 3rd Video IF | 102258 | | | | |
| L20 | 4th Video IF | 102265 | | | | Includes 41.25MC Trap and 150MMF Cap. |
| L21 | Series Peaking Coil | 102201 | 19-4060 | | 6110 | 62 Microhenries |
| L22 | Shunt Peaking Coil | 102351 | 19-3180 | TV-184 | 6180 | 180 Microhenries |
| L23 | Series Peaking Coil | 100441 | | | | 12 Microhenries |
| L24 | Series Peaking Coil | 100441 | | | | 12 Microhenries |
| L25 | Series Peaking Coil | 102196 | 19-3180* | TV-184 | 6180* | 180 Microhenries; Wound on 1800Ω resistor. |
| L26 | Shunt Peaking Coil | 102198 | 19-3180 | TV-184 | 6180 | 180 Microhenries |
| L27 | Series Peaking Coil | 102197 | 19-3180▲ | TV-184▲ | 6180▲ | 180 Microhenries; Wound on 8200Ω resistor. |
| L28 | Series Peaking Coil | 102200 | 19-3300 | | 6155 | 300 Microhenries |
| L29 | Shunt Peaking Coil | 102199 | 19-3125 | | 6153 | 120 Microhenries |
| L30 | RF Coil | 100441 | | | | 12 Microhenries |
| L31 | RF Coil | 100441 | | | | 12 Microhenries |
| L32 | 1st Sound IF | 102255 | | | | Includes 27MMF Cap. |
| L33 | 2nd Sound IF | 102254 | | | | |
| L34 | Ratio Det. | 102253 | | | | 12 Microhenries |
| L35 | RF Choke | | | | | |
| L36 | Chroma Take-off Trans. | 102261 | | | | Includes 4.5MC Trap. |
| L37 | Low Freq. Peaking Coil | 102242 | | | | |
| L38 | 1st Band-pass Trans. | 102264 | | | | |
| L39 | 2nd Band-pass Trans. | 102259 | | | | |
| L40 | Burst Amp. Trans. | 102252 | | | | Includes 1.6MMF & 47MMF Caps. |
| L41 | Demod. Driver Trans. | 102267 | | | | Includes 1000MMF and 680MMF Caps. |
| L42 | Ref. Osc. Screen Coil | | | | | Variable (Set② 27 Microhenries) Note 1 |
| L43 | Series Peaking Coil | 102248 | 19-3660 | | 6146 | 620 Microhenries |
| L44 | Shunt Peaking Coil | 102247 | 19-3180 | TV-184 | 6180 | 180 Microhenries |
| L45 | Shunt Peaking Coil | 102247 | 19-3180 | TV-184 | 6180 | 180 Microhenries |
| L46 | Series Peaking Coil | 102248 | 19-3660 | | 6146 | 620 Microhenries |
| L47 | Shunt Peaking Coil | 102246 | | | | 1100 Microhenries |
| L48 | Shunt Peaking Coil | 102246 | | | | 1100 Microhenries |
| L49 | Shunt Peaking Coil | 102246 | | | | 1100 Microhenries |
| L50 | RF Choke | 100441 | | | | 12 Microhenries |
| L51 | RF Choke | 100441 | | | | 12 Microhenries |

▲ Parallel with 8200Ω resistor.
* Parallel with 1800Ω resistor.
Note 1: Some versions use fixed peaking coil of 12 or 33 Microhenries.

## TRANSFORMER (HORIZ. OSC.)

| ITEM No. | DC RES. | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | RCA Victor PART No. | MEISSNER PART No. | MERIT PART No. | MILLER PART No. | RCA TYPE No. | Ram PART No. | Thordarson PART No. | |
| L52 | 90Ω | | 79966 | | | 6211 | | | HS-7 | Tapped ⓐ63Ω Horiz. Freq. Waveform |
| L53 | 45Ω | | 102195 | | | | | | | |

# PARTS LIST AND DESCRIPTIONS (Continued)

## FILTER CHOKE

| ITEM No. | RATINGS | | | REPLACEMENT DATA | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE (0 CURRENT 1000 ~) | RCA Victor PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
| L54 | .480A | 19Ω | .54 HY | 102134 | | | | | C-40X |

## FUSES

| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | RCA Victor PART No. | | LITTELFUSE PART No. | | BUSS PART No. | |
| | | | FUSE | HOLDER | FUSE | HOLDER | FUSE | HOLDER |
| M1 | 3" Pc. #21 wire | | 102792 | | | | | |
| M2 | 3AG | 2A 250V | 102182 | | 318002. (3AG-2A-P/T) | | GJV2 | |
| M3 | C | 3/4A | 102165 | 102163 | 332. 75U (C-3/4A) | 346003 | C 3/4 | HC 3/4 to 1 1/4 |
| M4 | C | 3/10A 250V | 102165 | 102162 | 332. 300 (C-3/10A) | 346001 | C 3/10 | HC 3/10 to 1/2 |

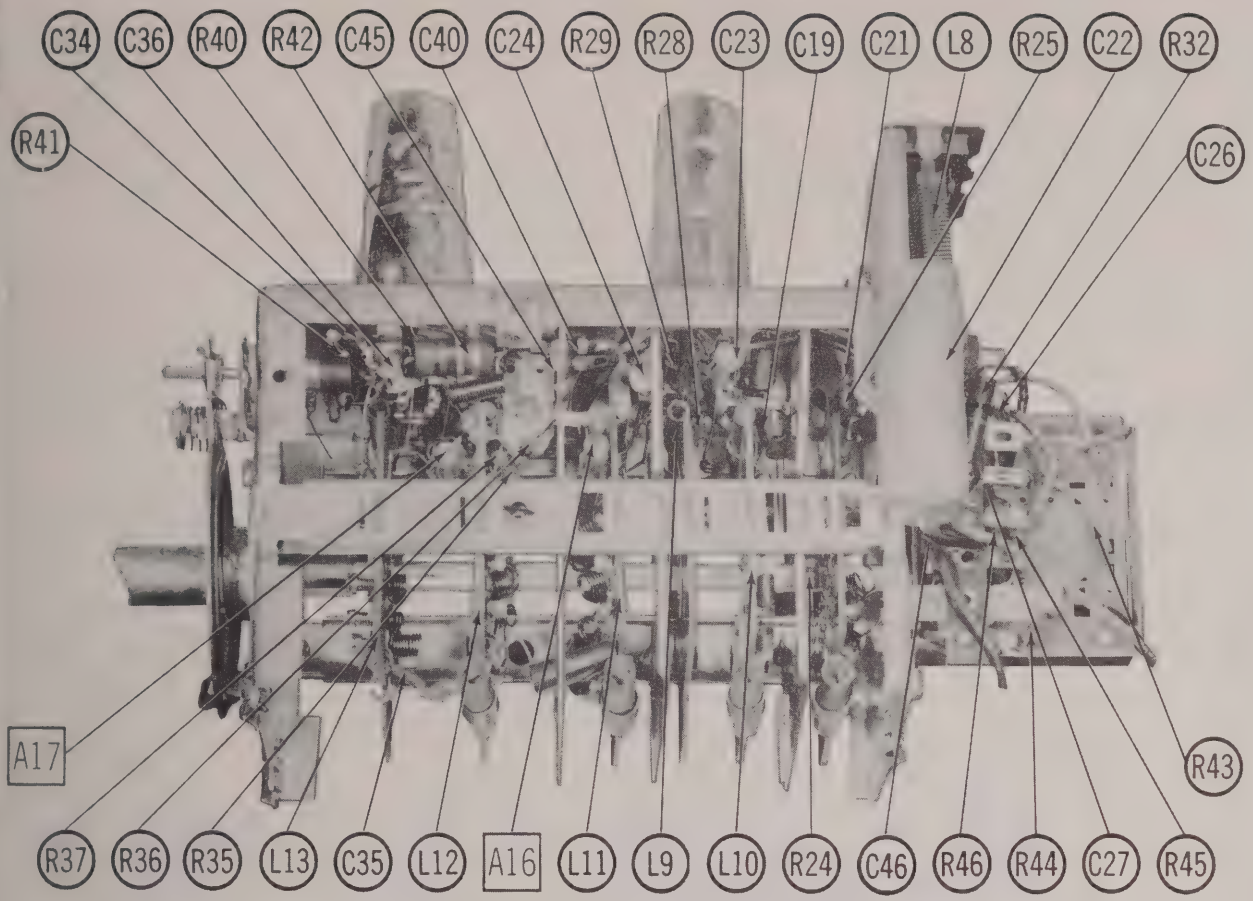
## CRYSTAL DIODES

| ITEM No. | ORIG. TYPE | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|
| | | RCA Victor PART No. | SYLVANIA PART No. | |
| M5 | 1N82 * | 77489 | 1N82A | UHF Mixer (Clip in ) |
| M6 | 1N60 | 76675 | 1N60 | Video Detector (Pigtail) |
| M7 | 1N60 | 76675 | 1N60 | Sound Detector (Pigtail) |
| M8 | 1N64 ♦ | 79985 | 1N60 | Color Killer Bias (Pigtail) |

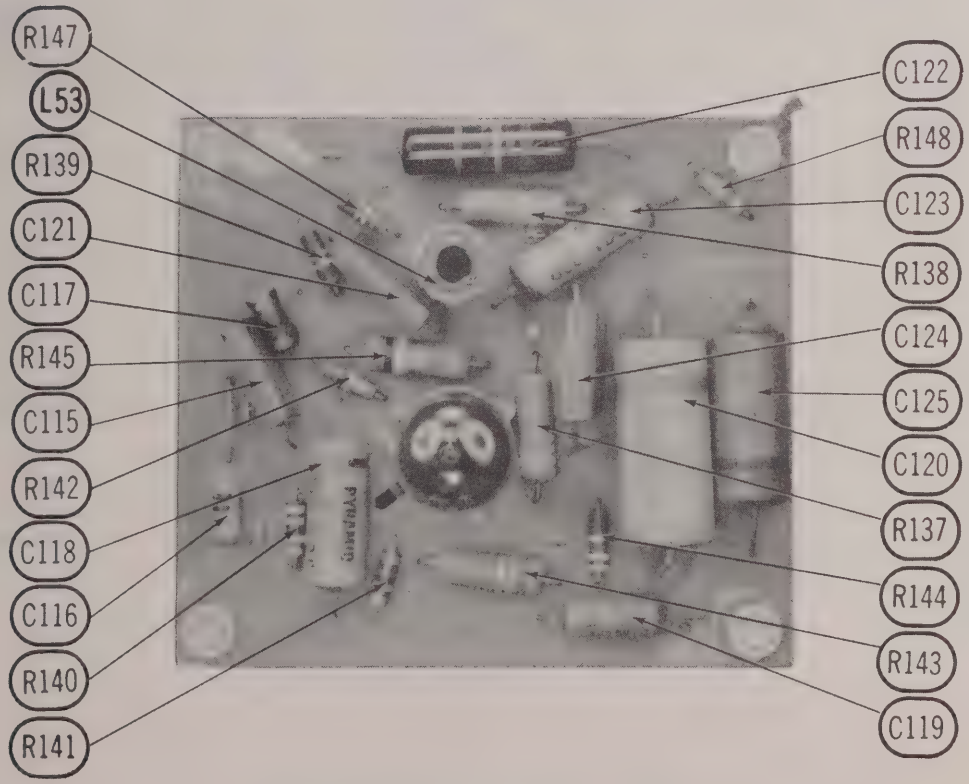
* A K3D may be used in some versions ♦ A 1N60 may be used in some versions.

## MISCELLANEOUS

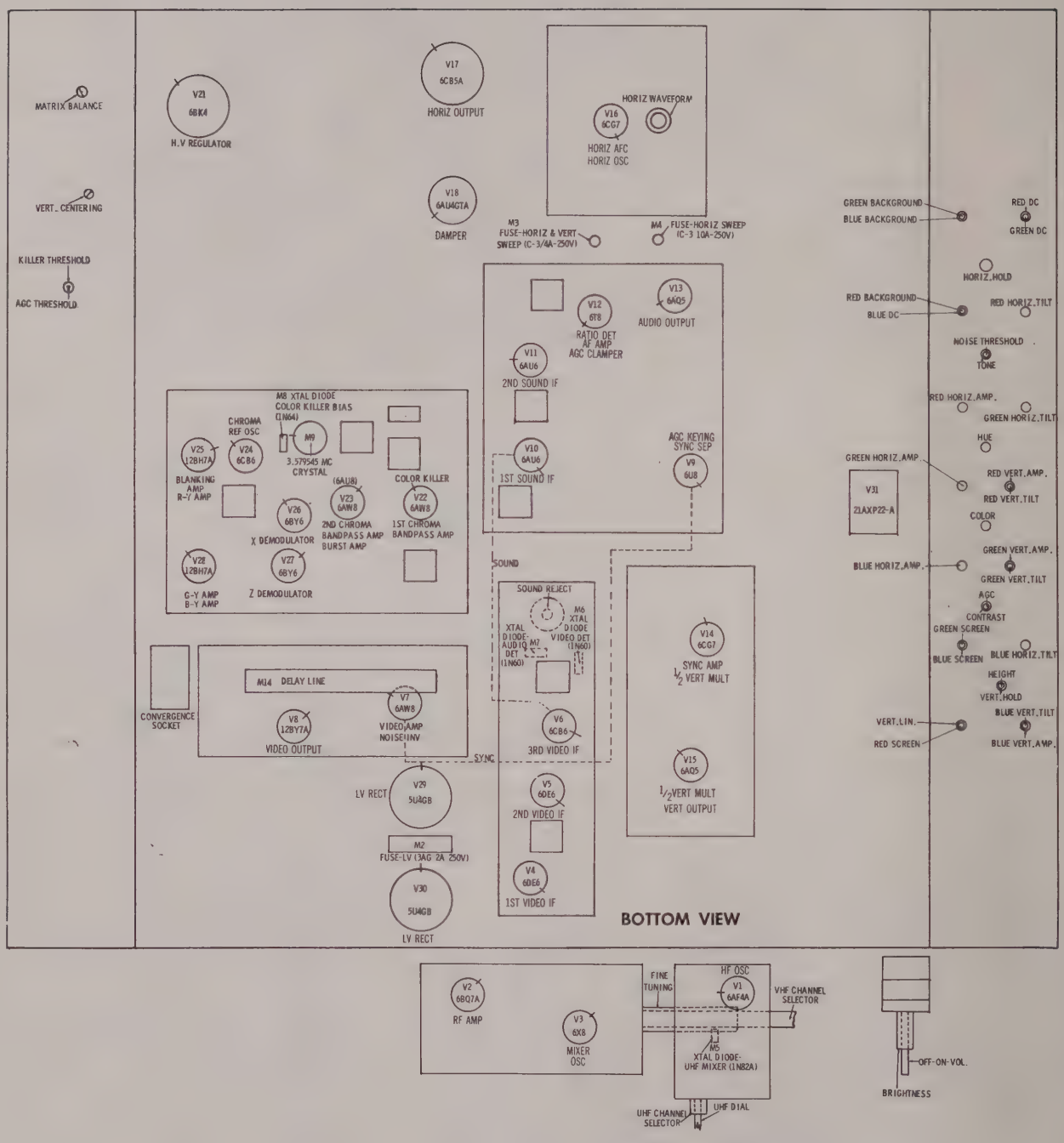
| ITEM No. | PART NAME | RCA Victor PART No. | NOTES |
|---|---|---|---|
| M9 | Crystal | 102249 | 3.579545MC Oscillator |
| M10 | Dial Light | 11891 | UHF #44 Type |
| M11 | Dial Light | 11891 | VHF #44 Type |
| M12 | Tuner | KRK40-E | UHF/VHF, Consists of UHF tuner part #KRK36-B and VHF tuner part #KRK35-A , Used in Ch. CTC5P |
| | Tuner | KRK40-H | UHF/VHF, consists of UHF tuner part #KRK36-B and VHF tuner part #KRK35-A, Used in Ch. CTC5T |
| | Tuner | KRK40-D | VHF, Consists of Sub-assy. part #KRK35-C, Used in Ch. CTC5N |
| | Tuner | KRK40-F | VHF, consists of Sub-assy. Part #KRK35-C, Used in Ch. CTC5R |
| | Tuner | KRK41 | VHF, Consists of Sub-assy. Part #KRK35-C, Used in Ch. CTC5U |
| | Tuner | KRK41-A | UHF/VHF, Consists of UHF tuner part #KRK36-D and VHF tuner part #KRK35A, Used in Ch. CTC5W |
| | Tuner | KRK42 | VHF, Consists of Sub-assy. Part #KRK35-C, Used in Ch. CTC5AA |
| | Tuner | KRK42-A | UHF/VHF, Consists of UHF tuner part #KRK36-D and VHF tuner part #KRK35-A, Used in Ch. CTC5AB |
| M13 | Ant. Matching Network | 100454 | Includes coils and caps. |
| M14 | Delay Line | 102189 | Luminance Channel |
| M15 | Switch | 102884 | UHF/VHF Ant. Changeover, Slide type |
| M16 | Switch | 102160 | Width, Rotary wafer |
| M17 | Magnet | 79604 | Purity Ring Assy. (6 required) |
| M18 | Magnet | 103172 | Blue Lateral Positioning. Part #102295 used in early versions. |
| M19 | Magnet | 102495 | Color Equalizer Assy. |
| M20 | Trimmer Cap. | 79558 | UHF Mixer (10-50MMF) |
| M21 | Trimmer Cap. | 102240 | 1st. Bandpass (50-380MMF) |
| | Shield | 102283 | Picture tube |
| | Shield Liner | 102438 | Picture tube |
| | Printed Board | 102126 | Video IF circuit (less tubes) |
| | Printed Board | 102121 | Video circuit (less tubes) |
| | Printed Board | 102124 | Sound circuit (less tubes) |
| | Printed Board | 102120 | Vertical circuit (less tubes) |
| | Printed Board | 102589 | Horizontal circuit (less tubes) |
| | Printed Board | 102781 | Chroma circuit (less tubes) |
| | Safety Glass | 102278 | All models |
| | Bezel | 102288 | |
| | Knob | 100407 | Horiz. centering, focus, width switch |
| | Knob | 79533 | Horiz. frequency |
| | Knob | 101124-B | Brightness, All models |
| | Knob | 102722 | VHF channel selector, Models 21-CD-7895, U, 21-CD-7915, U |
| | Knob | 102723 | VHF channel selector, Models 21-CD-7897, U, 21-CD-7916, U, 21-CD-7917, U |
| | Knob | 101151-B | VHF channel selector, Models 21-CD-7936, U, 21-CD-7975, U |
| | Knob | 101152-B | VHF channel selector, Models 21-CD-7936, U, 21-CD-7956, U, 21-CD-7996, U |
| | Knob | 101153-B | VHF channel selector, Models 21-CD-7958, U, 21-CD-7999, U |
| | Knob | 102653 | UHF fine tuning, Models 21-CD-7895U, 21-CD-7915U |
| | Knob | 102578 | UHF fine tuning, Models 21-CD-7897U, 21-CD-7916U, 21-CD-7917U |
| | Knob | 101144-B | UHF fine tuning, Models 21-CD-7935U, 21-CD-7936U, 21-CD-7956U, 21-CD-7958U, 21-CD-7975U, 21-CD-7996U, 21-CD-7999U |
| | Knob | 102274 | Color, Contrast, Horiz. Hold, Hue and Tone - All Models |
| | Knob | 101276-B | VHF fine tuning, Models 21-CD-7895, U, 21-CD-7915, U, 21-CD-7916, U, 21-CD-7917, U, 21-CD-7987, U |
| | Knob | 101154-B | VHF fine tuning, Models 21-CD-7935, U, 21-CD-7936, U, 21-CD-7956, U, 21-CD-7958, U, 21-CD-7975, U, 21-CD-7996, U, 21-CD-7999, U |
| | Knob | 101138-B | On-off volume, Models 21-CD-7895, U, 21-CD-7915, U |
| | Knob | 100621-B | On-off volume, Models 21-CD-7897, U, 21-CD-7916, U, 21-CD-7917, U |
| | Knob | 101139-B | On-off volume, Models 21-CD-7935, U, 21-CD-7975, U |
| | Knob | 101137-B | On-off volume, Models 21-CD-7936, U, 21-CD-7956, U, 21-CD-7996, U |
| | Knob | 101183-B | On-off volume, Models 21-CD-7958, U, 21-CD-7999, U |



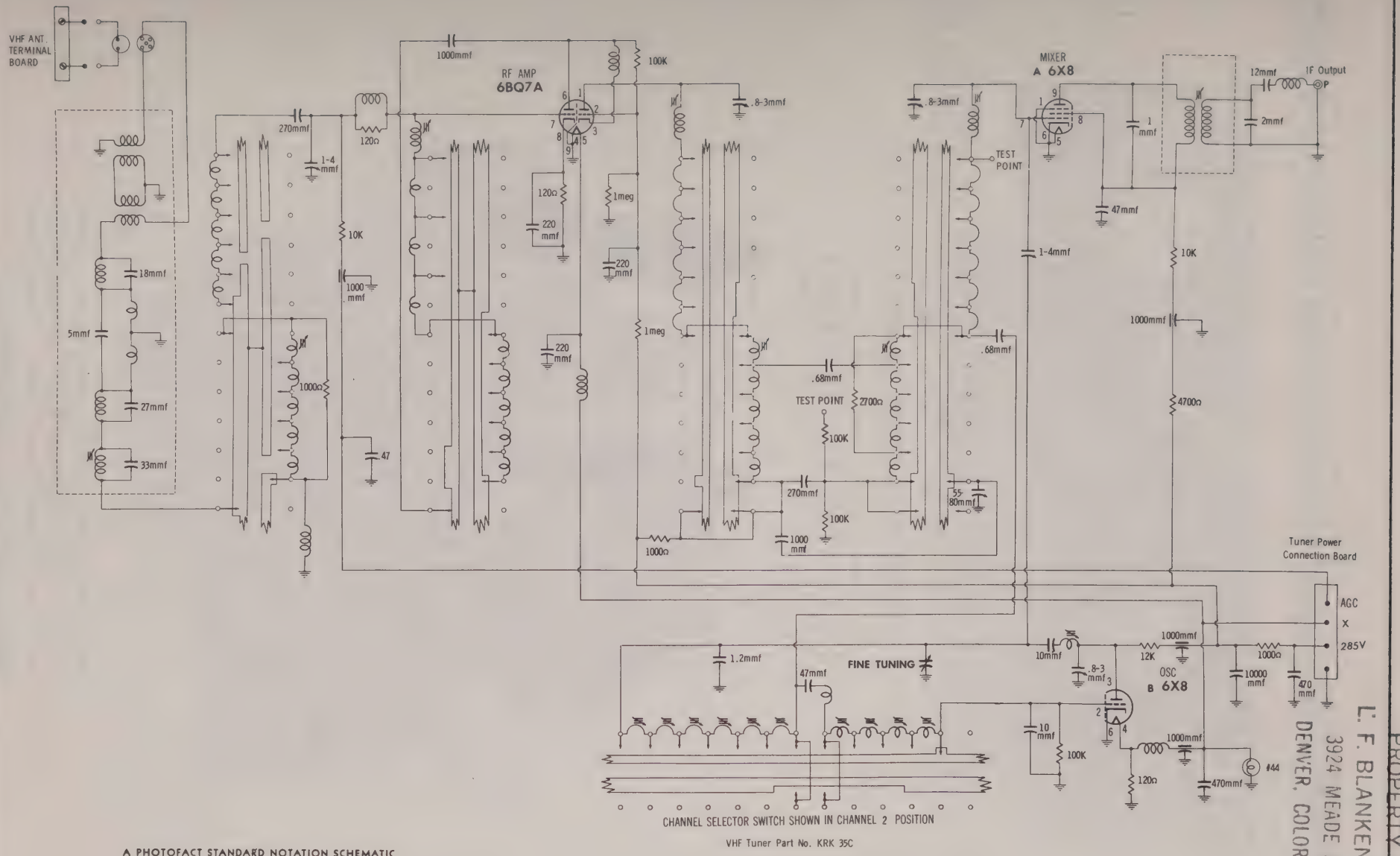

RF TUNER RIGHT SIDE




HORIZONTAL SWEEP BOARD




# TUBE PLACEMENT CHART

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# ALTERNATE VHF TUNER SCHEMATIC

RCA VICTOR MODELS 21-CD-7895, U, 21-CD-7897, U, 21-CD-7915, U, 21-CD-7916, U, 21-CD-7917, U, 21-CD-7935, U, 21-CD-7936, U, 21-CD-7956, U, 21-CD-7958, U, 21-CD-7975, U, 21-CD-7996, U, 21-CD-7999, U (Ch. CTC5AA, AB, N, P, R, T, U, W)

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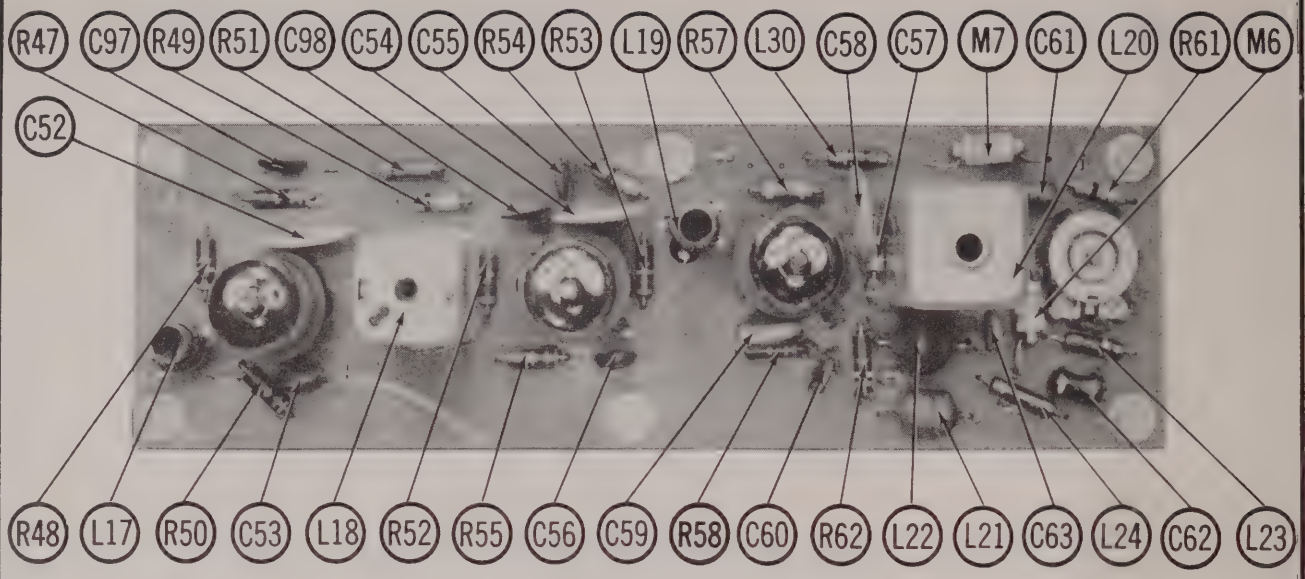
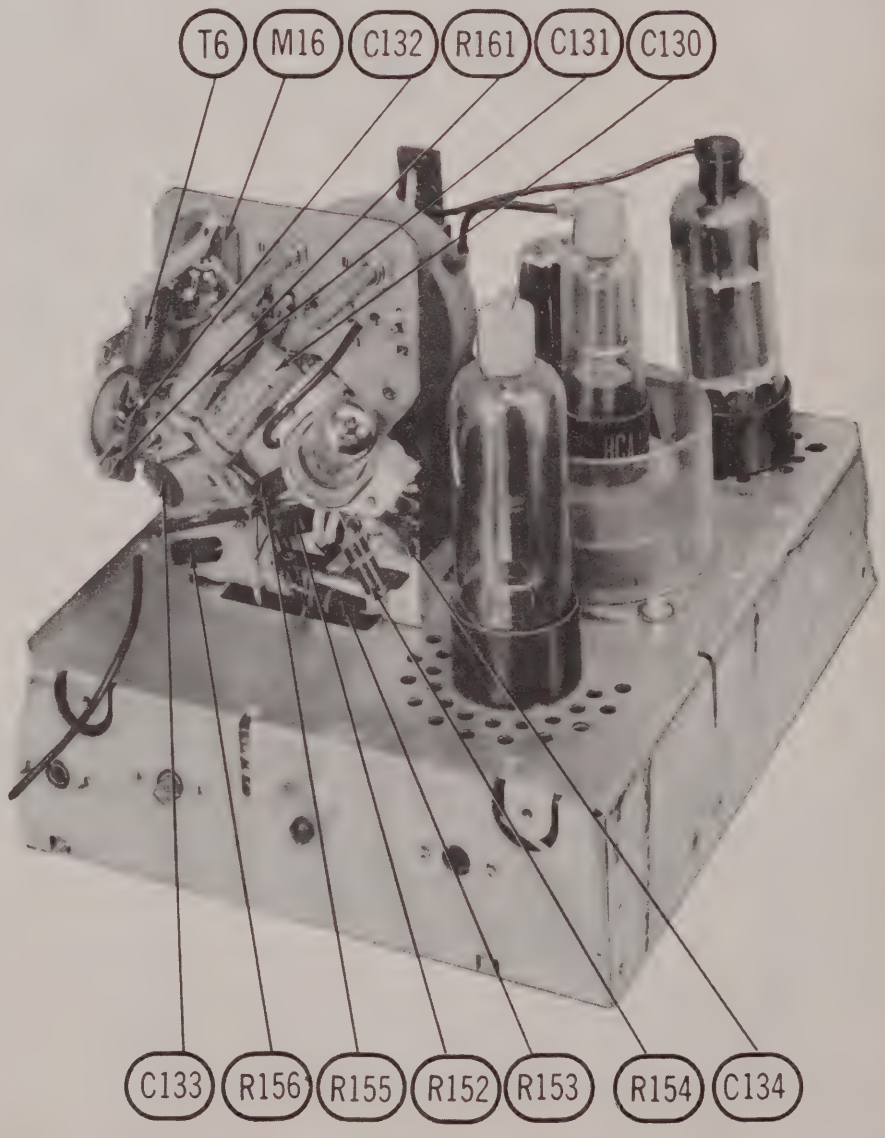
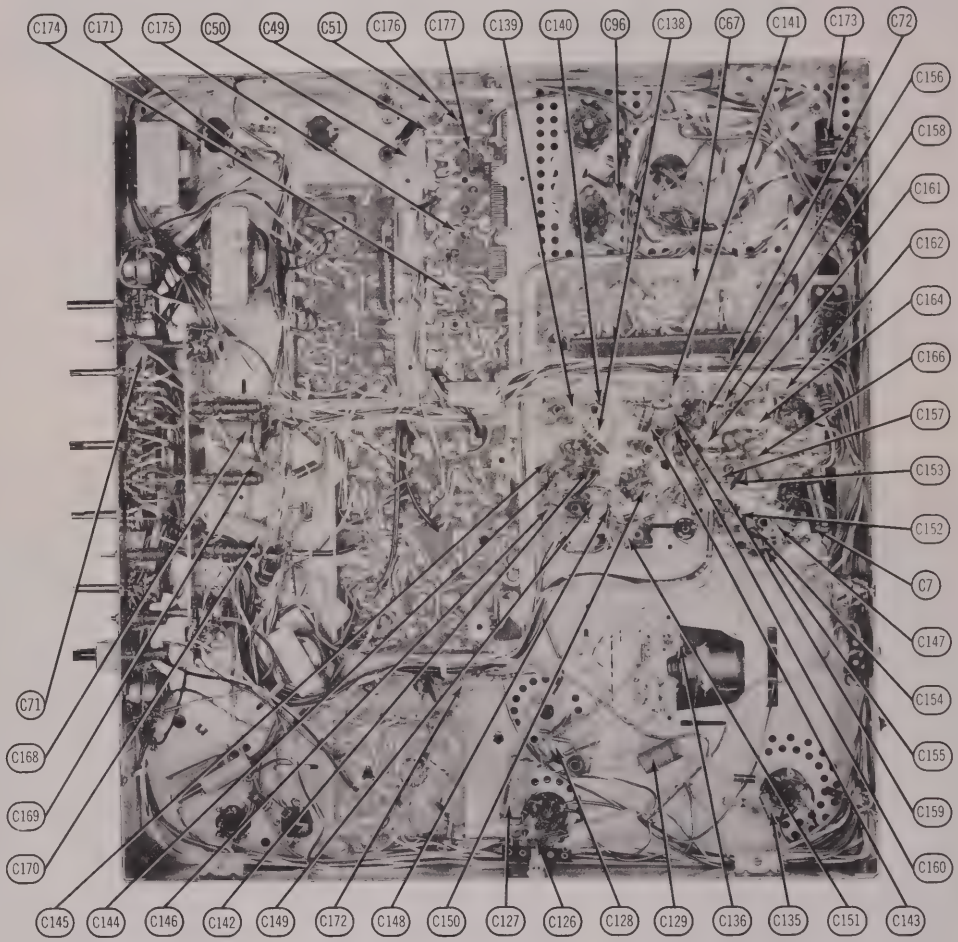


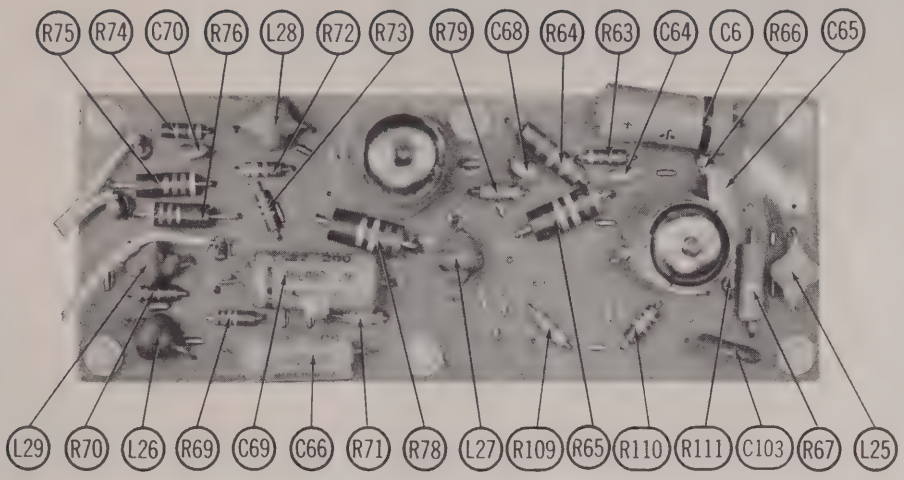

**VIDEO IF PRINTED BOARD**



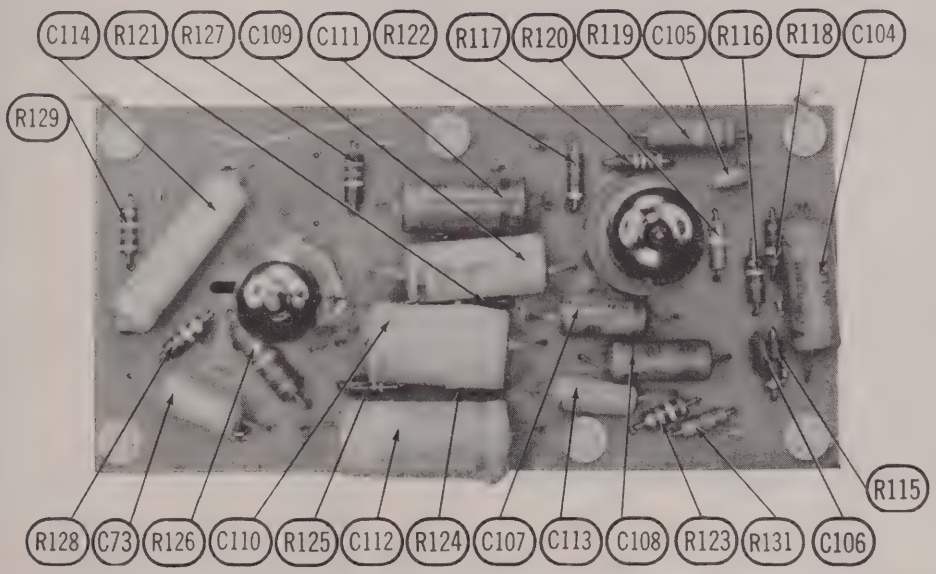

**HIGH VOLTAGE COMPARTMENT**



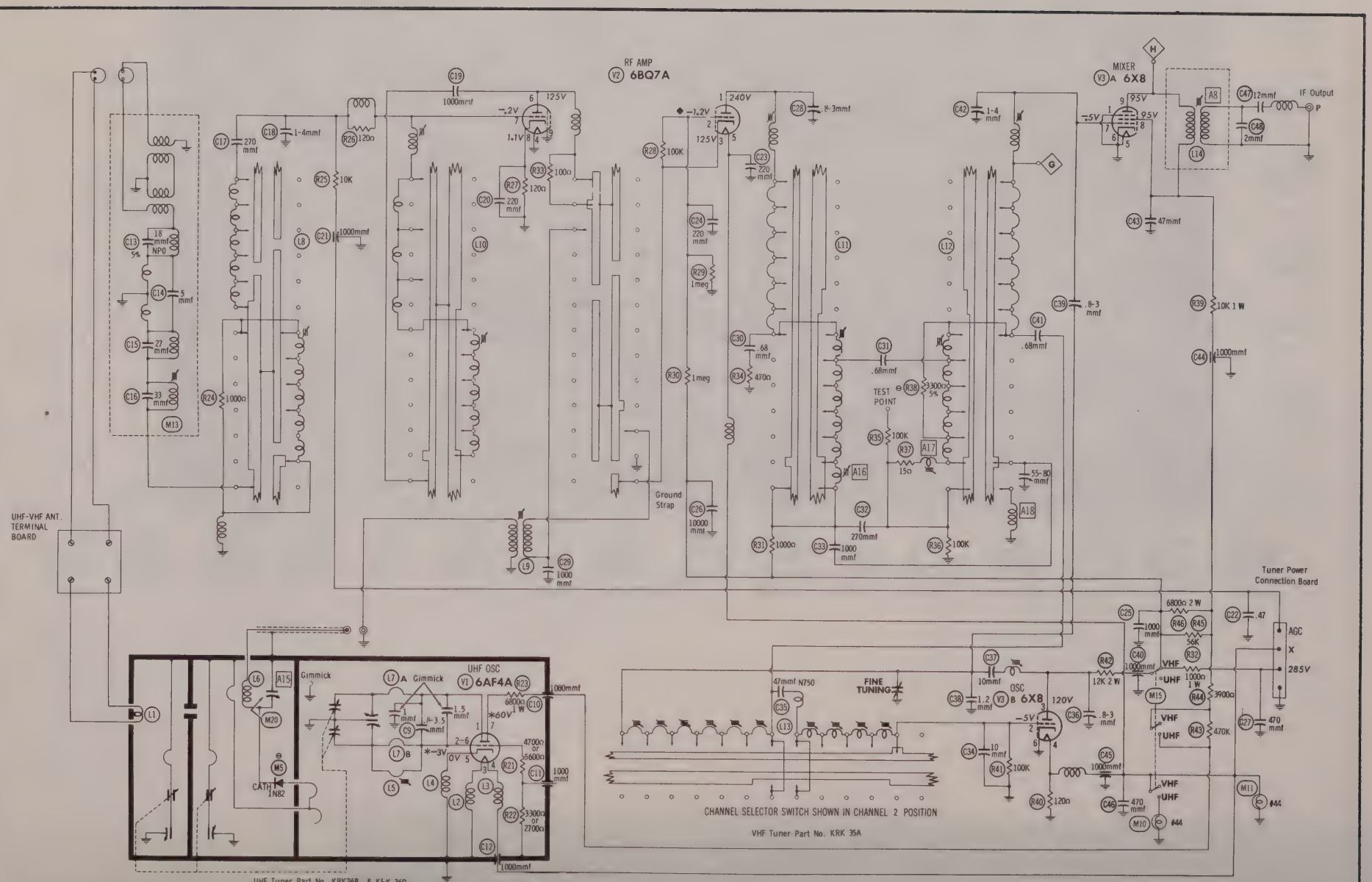

CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION




VIDEO & BLANKING PRINTED BOARD




VERTICAL PRINTED BOARD

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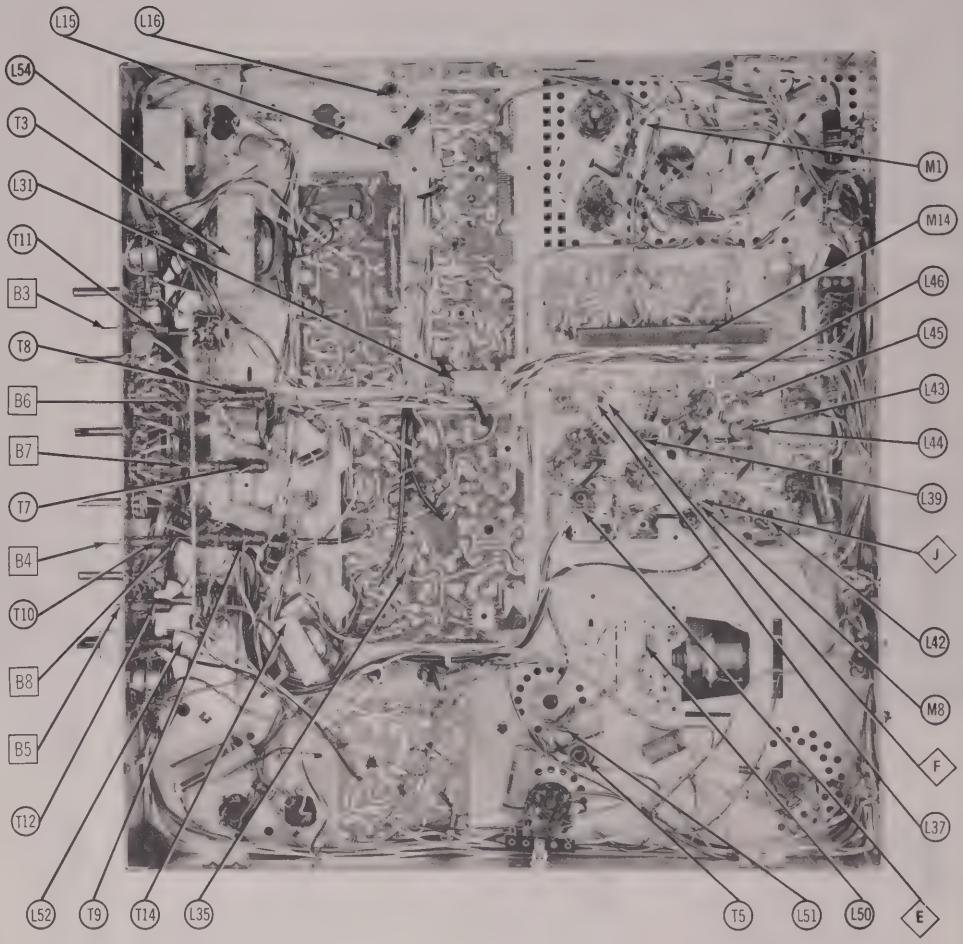
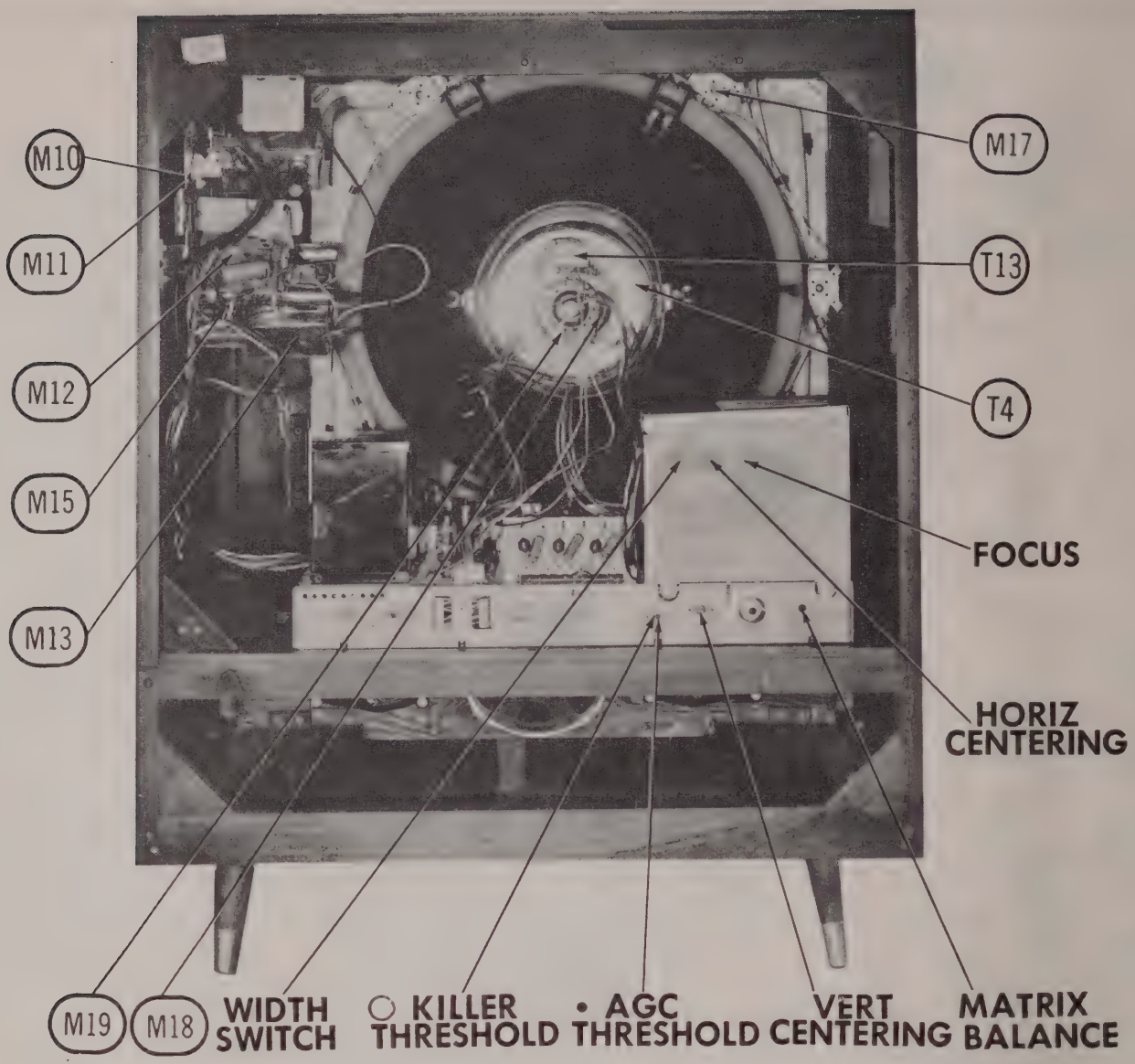
* MEASURED IN "UHF" POSITION.

◆ MEASURED FROM PIN 3 OF V2.

# TUNER SCHEMATIC




CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION




## CABINET—REAR VIEW

## DISASSEMBLY INSTRUCTIONS

SAFETY GLASS CLEANING

1. Remove 5 push-on type control knobs from front control panel.
2. Remove 2 metal screws holding control panel and remove panel.
3. Insert a small screwdriver into 2 round spring hooks at top of control panel, pulling the bottom trim around the safety glass out.
4. Pull bottom of trim out approximately 6" and slide down to remove.
5. Remove 4 clips exposed by releasing from inside and removing from the front. Use caution when removing the clips since they hold the safety glass.

PICTURE TUBE REMOVAL

1. Lay receiver face down on a pad.
2. Remove lateral correction magnet, purity magnet and convergence yoke assembly.
3. Remove 4 hex nuts holding picture tube to the front of the cabinet.
4. Remove HV insulator and yoke.
5. Remove picture tube and flange insulator.
6. Remove flange insulator and HV connector.

CHASSIS REMOVAL

1. Remove 5 push-on type control knobs from control panel, 6 from the side.
2. Loosen 2 wood screws, remove 2 metal screws and the rear cover.
3. Remove picture tube socket, yoke plug, convergence yoke plug, HV lead, tuner power cable, tuner output lead and 2 speaker leads.
4. Remove 2 metal screws holding control bracket to tuner.
5. Remove 4 chassis bolts from the bottom.
6. Remove the chassis.
7. Loosen 2 wood screws holding antenna terminal board.
8. Remove hex nut from under channel selector knobs, 2 hex nuts inside cabinet holding tuner.
9. Remove the tuner.
10. Remove 4 hex nuts, 8 plastic screws and 3 speakers.

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RCA VICTOR
MODEL 205 Series

RCA VICTOR
MODEL 205 Series

## GENERAL INFORMATION

The RP-205 Series record changers are four-speed mechanisms designed to play, in automatic sequence, a stack of 7", 10" or 12" records, or 10" and 12" records intermixed, and shut off automatically after playing the last record.

A separte $1\frac{1}{2}$" diameter center post is provided which is placed over the center spindle when playing 45 R. P. M. records.

Up to fourteen 7", ten 12" or twelve 10" records will play and be automatically changed on these changers. Any assortment of 10" and 12" records, of the same type, may be intermixed.

Record separation is accomplished by movement of a finger in the center spindle. This finger directly separates records having a 1/4" centerhole and actuates the knives and shelves of the center — post used for the playing of 45 R. P. M. records having a $1\frac{1}{2}$" centerhole.

The tripping method used is the velocity type. This system depends upon any rapid movement of the pick — up arm to actuate the trip mechanism.

Manufactured by:

Radio Corporation of America

RCA Victor Radio And "Victrola" Division

Camden, New Jersey

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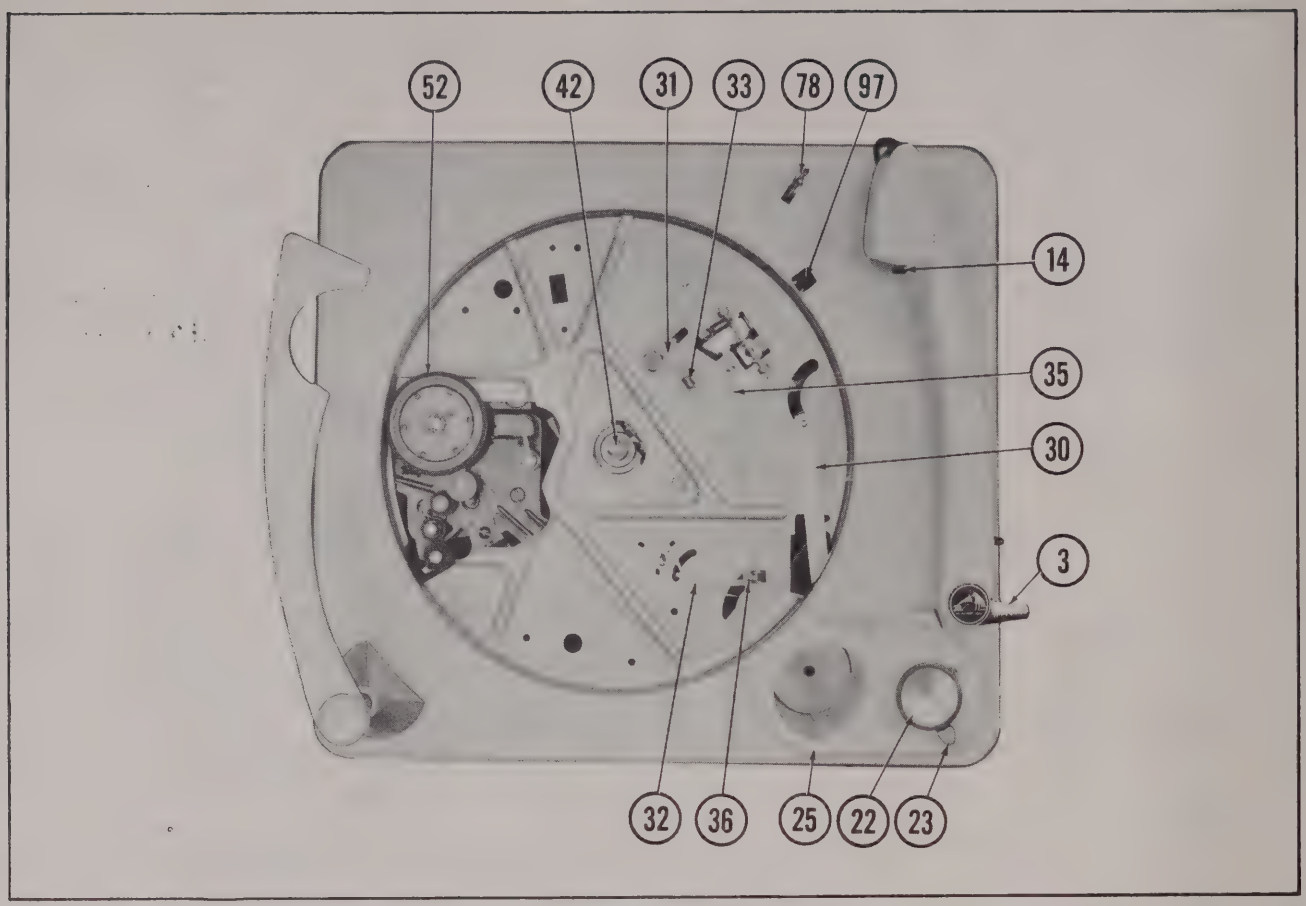


FIGURE 1

## SPECIFICATIONS

RP-205-1
115 volts, 60 cycles, 4 pole motor. Moving coil pickup in plug-in head. Pickup in plug-in head. Pickup #102956 is equipped with 1-mil diamond stylus, pickup #102955 is equipped with 3 mil synthetic sapphire stylus.

RP-205-2
115 volts, 60 cycle, 2 pole motor. Ceramic pickup Stock No. 100653 equipped with dual synthetic sapphire stylus assembly.

RP-205-3 MI-12807-A
115 Volts, 60 cycles, 4 pole motor. Designed for use with variable reluctance pickups MI-12110-A or MI-12112-A (pickup not included).

RP-205-4 MI-12820-B
115 volts, 60 cycles, 4 pole motor. Ceramic pickup Stock No. 100653 equipped with dual synthetic sapphire stylus assembly.

RP-205-5
115 volts, 60 cycles, 2 pole motor. Ceramic pickup Stock No. 100653 equipped with dual synthetic sapphire stylus assembly.

RP-205-6
Same as RP-205-2 except for the addition of a pickup arm retaining clip.

RP-205A-1
117 V./234V., 60 cycle dual voltage motor. Shipped for 60 cycle operation but may be converted to 50 cycle operation. Ceramic pickup Stock No. 100653 equipped with dual synthetic sapphire stylus assembly.

RP-205A-2
117 V./234V., 50 cycle dual voltage motor. Shipped for 50 cycle operation but may be converted to 60 cycle operation. Ceramic pickup Stock No. 100653 equipped with dual synthetic sapphire stylus assembly.

## OPERATING INSTRUCTIONS

Loading —

1. Pull straight up on record stabilizer cap until stabilizer clears spindle. Swing stabilizer to the left until pin in shaft drops into locating groove.

Note: 16 2/3, 33 1/3, 45 and 78 R.P.M. records cannot be intermixed. The speed control knob must be reset for each type record.

2. Place records on spindle and lower to offset shelf. Hold records level and replace stabilizer arm over spindle.

Operating The Changer —

The changer is provided with a dual control located on the front right hand corner of the motor board.

The outer portion of the dual control designated as "Rej-On-Off" provides a means of controlling the

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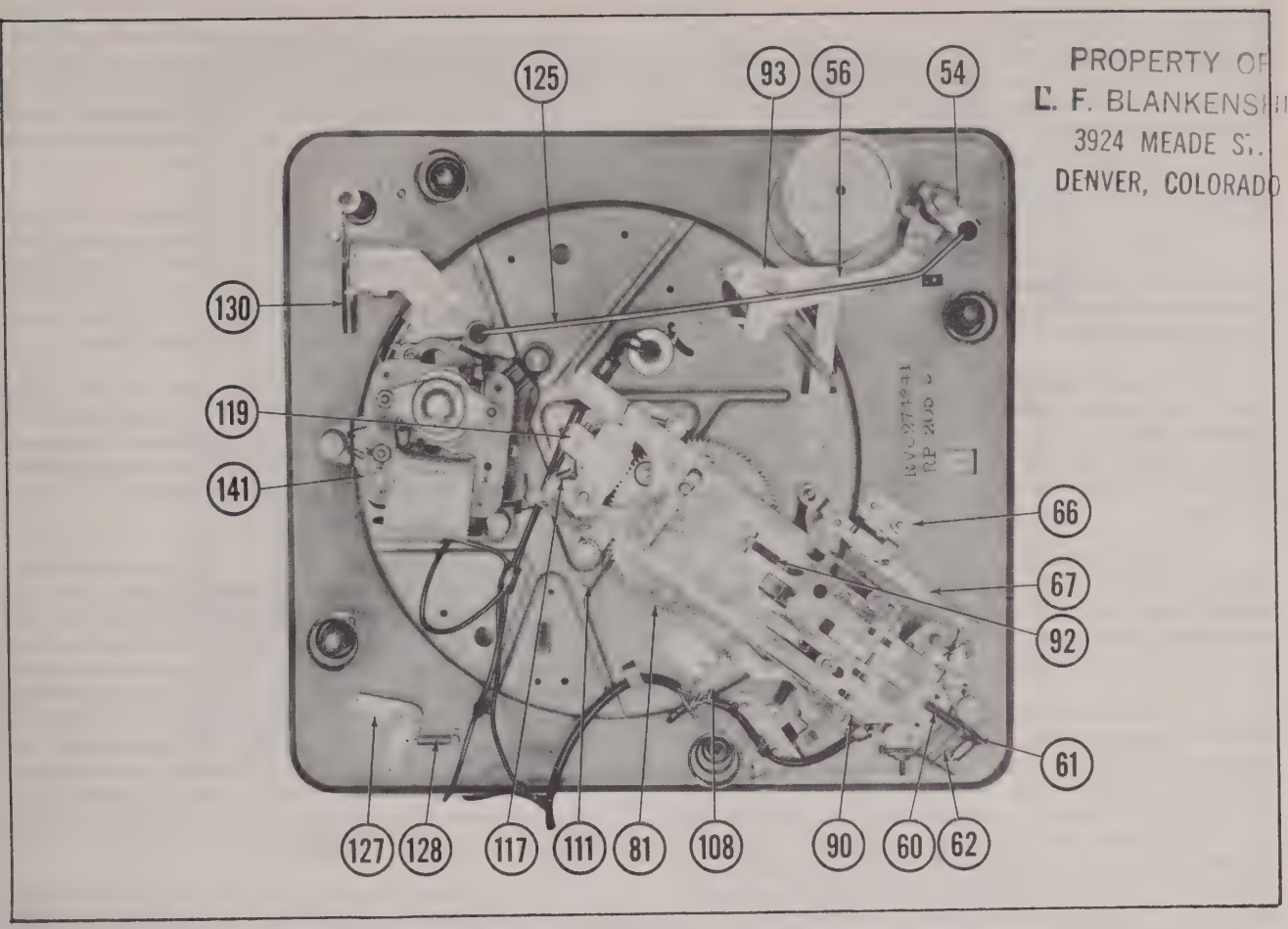


FIGURE 2

operation of the mechanism while the inner control having the markings "16-33-45-78" governs the turntable speed.

By turning the outer control to the "On" position the turntable start rotating. Turning this control one step further in a clock wise direction to the "Rej" position, then releasing, starts the automatic operation of the mechanism.

The changer will shut off automatically after the last record has been played but if desired, can be stopped any time a record is playing by turning the "Rej-On-Off control to "Off" and placing the pickup arm on its rest.

The inner or motor speed control makes possible the selection of one of four speeds, 16 2/3, 33 1/3, 45, or 78 R.P.M., by rotating the knob to the proper position.

The speed control should be turned to the "N" position (midway between "45" and "78") to remove the force of the motor shaft against the idler wheel when the changer is not expected to be used for an extended period of time.

Note: Make certain the proper stylus is selected for the type record to be played. (.001 "stylus for 16 2/3, 33 1/3 and 45 R.P.M. records, .003" for 78 R.P.M. records.)

Rejecting –

To reject a record at any time while changer is operating, turn changer control knob to "Rej. and release.

Unloading –

Lift the stabilizer arm and swing to the left. Lift stack of records straight up and off spindle.

Using 45 R.P.M. centerpost –

The removable centerpost is for use with 16 2/3 or 45 records having the large centerhole. It must be placed over the center spindle with the word "Front" Facing to the Front. Care should be exercised in placing and removing centerpost so as to prevent damage to smaller spindle.

A well is provided on the motorboard for storage of the centerpost when not in use. The centerpost may be firmly secured, after placing it in the well, by pushing down until a slight "click" is heard. It may be necessary to twist slightly while pushing down. To remove centerpost from well, twist slightly until centerpost "pops up".

## CHANGE CYCLE

Place "On-Off-Rej." control lever (22) in the "On" position. The movement of this lever and its associated levers result in the power switch being actuated and the motor starts running. Place control lever (23) in the "Rej." position and permit it to return to the "On" position automatically.

This movement of control level (23) transmits a force from lever (32) through reject wire (35) to lever (31). Lever (31) then contacts and applies force against the turned up lance on trip slide lever (77) and pushes

the trip slide in an outward direction away from the turntable spindle. This action causes the tab on the end of trip slide (77) to contact trip intermedeate lever (86) which, in turn, moves the trip engagement pawl toward the hub on the turntable. As the turntable rotates, the projection on its hub momentarily strikes the engagement pawl which pushes cycling gear (81) for enough that its teeth and those on the turntable hub will mesh.

As cycling gear (81) rotates, a stud which is mounted on the bottom of the gear and extends through and rides in the elongated slot in cycling slide (90) pushes the slide outward away from the spindle.

Almost immediately after cycling slide (90) starts its lateral travel the pickup arm lift rod (26) rides up the inclined cam surface located at rear of cycling slide (90), forcing the lift rod upward against the height adjustment stud (12) causing the pickup arm to rise.

About this time cycling gear (81) has rotated sufficiently for trip pawl (86) to slide over the edge of a small piece of metal extending from the bottom of the motorboard which resets trips pawl (86) to prevent the mechanism from tripping continuously.

The wire takeup spring (89) now makes contact with the stud on pickup arm lever (76) and starts the pickup arm on its outward movement. At this time the upper portion of the stud on pickup arm lever (76) latches with the pickup arm return lever (72). This locked condition causes both the pickup arm lever (76) and the pickup arm return lever (72) to rotate as a unit in opposition to the force applied by the pickup arm return spring (68). Since the pickup arm is connected to pickup arm lever (76) through the pickup arm shaft, the pickup arm will follow any movement of the pickup arm lever (76).

While the pickup arm lever (76) and the pickup arm return lever (72) are latching together, and the cycling slide is approaching the end of its outward travel the stud on the rear of cycling slide (90) contacts pickup arm latch actuating lever (62) and unlatches the pickup arm return lever (72) from pickup arm latch lever (58). If levers (72 and 58) fail to unlatch the pickup arm will land in the rest position instead of landing on the record.

As the slide reaches the extreme end of its outward travel the pickup arm lever (76) is pushed to a position where one end of the lever is against a stud extending from the bottom side of the motorboard while the stud on the other end of lever (76) remains against wire takeup spring (89).

The pickup arm lever (76) held in this wedged position produces a positive stabilizing action for the pickup arm as the record drops to the turntable. It is necessary that pickup arm lever (76) and pickup arm return lever (72) remain coupled together as the pickup arm moves in for landing or erratic landing will result.

Just before cycling slide (81) reaches its maximum travel outward, eccentric stud (131) contacts and pushes spindle operating arm (118).

The lower end of the spindle extending through the hole in operating arm (118) rides along with the arm. Since the push off finger (lower end of spindle) is pivoted about a pin driven through the spindle, the upper end of the finger moves in a direction to push the bottom record of a stack off the spindle shelf and the record drops to the turntable. After the record drops to the turntable the cycling slide (90) starts on its return trip to the normal out of cycle position.

As cycling slide (90) starts its return trip, wire spring (89) moves away from the stud on pickup arm lever (76) permitting pickup arm lever (76) and pickup return lever (72) (which are locked together) to direct the movement of the pickup arm inward through action of pickup arm return lever return spring (68).

The pickup arm moves inward until the pickup arm return lever (72) blocked by the landing selector lever (99) which contacts on of three steps formed in the pickup arm return lever (72). Each step corresponds to one of the three landing positions, 7", 10" or 12".

As the pickup arm return lever moves the pickup inward, the stud on the top side of pickup arm return lever (72) moves away from switch shut-off link (71) and permits spring (64) to rise the end of switch shut-off link (67) so as to clear the escape lever (point "A" on the exploded view). Otherwise the on-off switch would be actuated and the motor would stop. When the pickup arm is directly above the landing position, cycling slide (90) has returned sufficiently for the pickup arm lift rod (26) to ride down the inclined portion of the lance on slide (90) and the pickup stylus sets on the starting grooves of the record.

An instant before the stylus sets on the record a stud located on the rear of cycling slide (90) contacts the end of actuating lever (74), unlatching pickup from the pickup arm return lever (72) and the pickup arm becomes free in its movement.

The remaining short travel of cycling slide (90) results in the stud, located on the rear of the cycling slide, carrying actuating lever (74) sufficiently so that the teeth on the turntable hub run off the last tooth at the cut-away section of cycling gear (81). At this time the stud on the bottom of cycling gear which rides in the elongated slot in the cycling slide, drops into a stop notch and the cycling gear stops rotating.

As the cycling gear is completing its cycle a stud located on top of cycling gear (81) contacts and pulls trip slide (90) back into position for the next tripping.

The final phase of the change cycle is completed after the cycling gear (81) has rotated sufficiently so that the teeth on the turntable hub run off the last tooth at the cut-away section of cycling gear (81). At this time the stud on the bottom of the cycling gear which rides in the elongated slog in the cycling slide, drops into a stop notch and the cycling gear stops rotating.

Muting switch (108), which is closed during the change cycle to prevent undesirable noises from being transmitted to the audio system, is opened at this time by a tab on cycling slide (90).

As the pickup arm nears the end of a record, the pickup arm lever (76) pushes trip slide lever (77), which, in turn, engages the trip pawl intermediate lever (86) which through a friction clutch arrangement moves the trip engagement pawl toward the hub on the turntable.

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DENVER, COLORADO

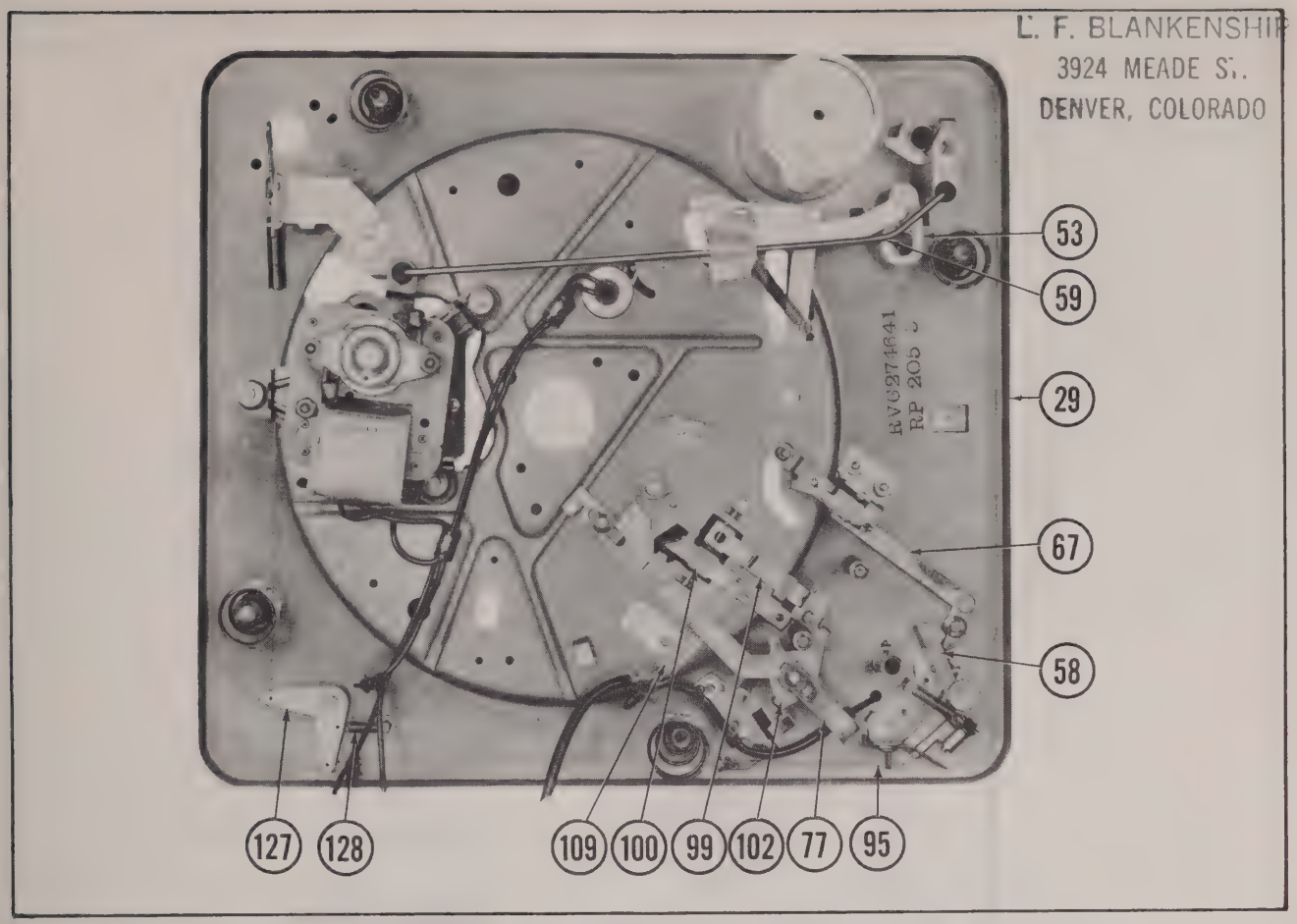


FIGURE 3

While a record is playing the same motions of the trip engagement pawl are not sufficient to cycle the mechanism because on each revolution of the turntable the wiping contact by the turntable hub projection moves the trip engagement pawl back to clear the projection. In the first revolution of the turntable after the pickup arm has entered the lead-out groove and advanced rapidly toward the spindle, the trip engagement pawl is moved far enough to definitely engage the projection on the turntable hub. This firm contact rotates cycling gear (81) sufficiently to have the teeth of the turntable hub and the cycling gear engage to start another change cycle.

As stated previously the pickup arm landing position for 7, 10, and 12 inch records is determined by the contact of the landing selector lever (99) and the various steps in the pickup arm return lever (72).

There are two depressions in the cycling gear (90) that play an important part in pickup arm landing position indexing. The depression located adjacent to the trip pawl mechanism provides a mean of indexing for 7" records. This is accomplished by permitting the end of the 10" indexing lever (100) to drop down in the depression as the gear rotates causing the other end to push the landing selector lever (99) upward as far as it will go. The pickup arm return lever (72 ) will then make contact with the landing selector lever (99) on the upper step and the pickup arm will land on the start of a 7" record.

When either a 10" or a 12" record is lying on the turntable the rubber end of the 10" indexing lever (100) is prevented from rising even through the other end of the lever tends to drop into the depression in the cycling gear. Consequently, the landing selector lever (99) is only pushed up far enough that the pickup arm return lever (72) makes contact with the second step and the pickup arm will land on a 10" record.

If a 12" record is dropped to the turntable the edge of the record strikes the 12" indexing lever (78) and causes the lower end of the lever to rotate selecting lever (102) far enough to permit landing selector lever (99) to drop off the turned up ear on selecting lever (102) and comes to rest on the horizontal ear of lever (102). With landing selector lever (99) in this position, it will make contact with the lower step in the pickup arm return lever (72) stopping the pickup arm at the 12" indexing position.

The other depression opposite the trip pawl mechanism provides a means of raising the end of the landing selector lever (99) to the top of the turned up ear on selecting lever (102) so the landing is automatically returned to the 10" landing position. This means of automatically returning the pickup landing to 10" position makes it possible to play 10" and 12" records intermixed.

Mechanism Stops After Playing Of Last Record –

The record stabilizer arm (43) not only performs the function of stabilizing the records on the spindle shelf but it also serves the purpose of actuating the automatic stopping device.

As the last record of the stack drops to the turntable the record stabilizing arm (43) drops and actuates

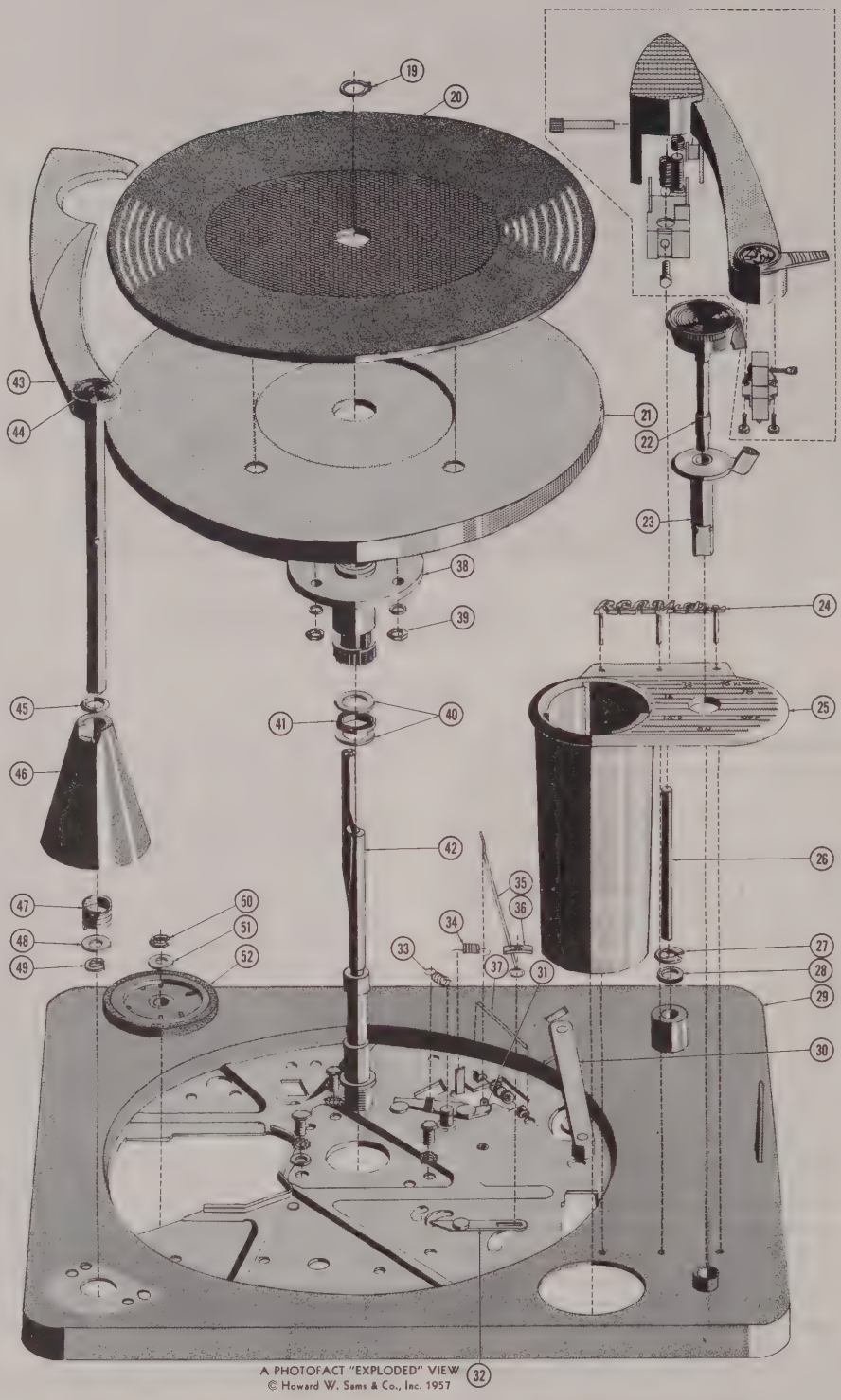


FIGURE 4A. EXPLODED VIEW OF PARTS ABOVE BASEPLATE

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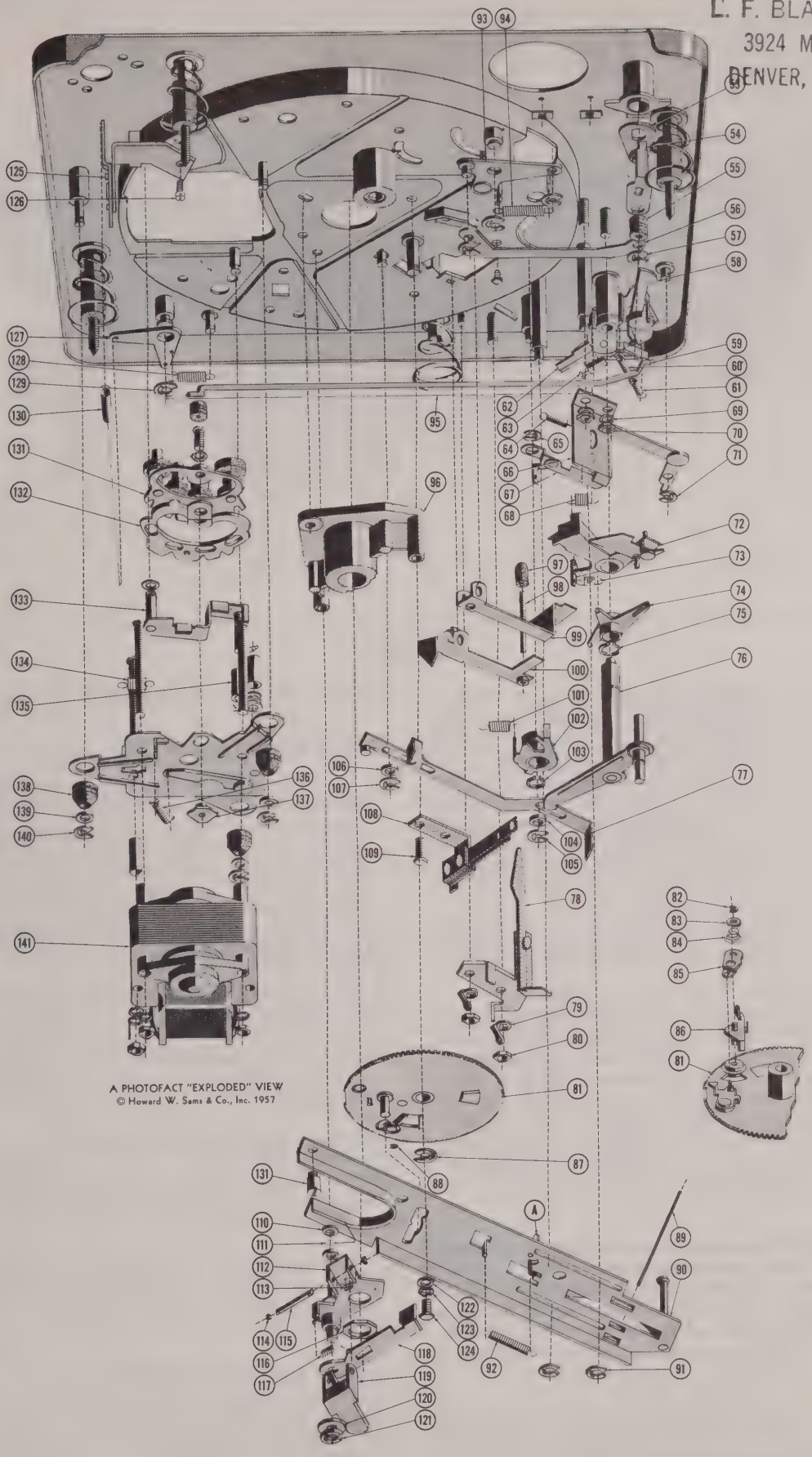



FIGURE 4B. EXPLODED VIEW OF PARTS BELOW BASEPLATE

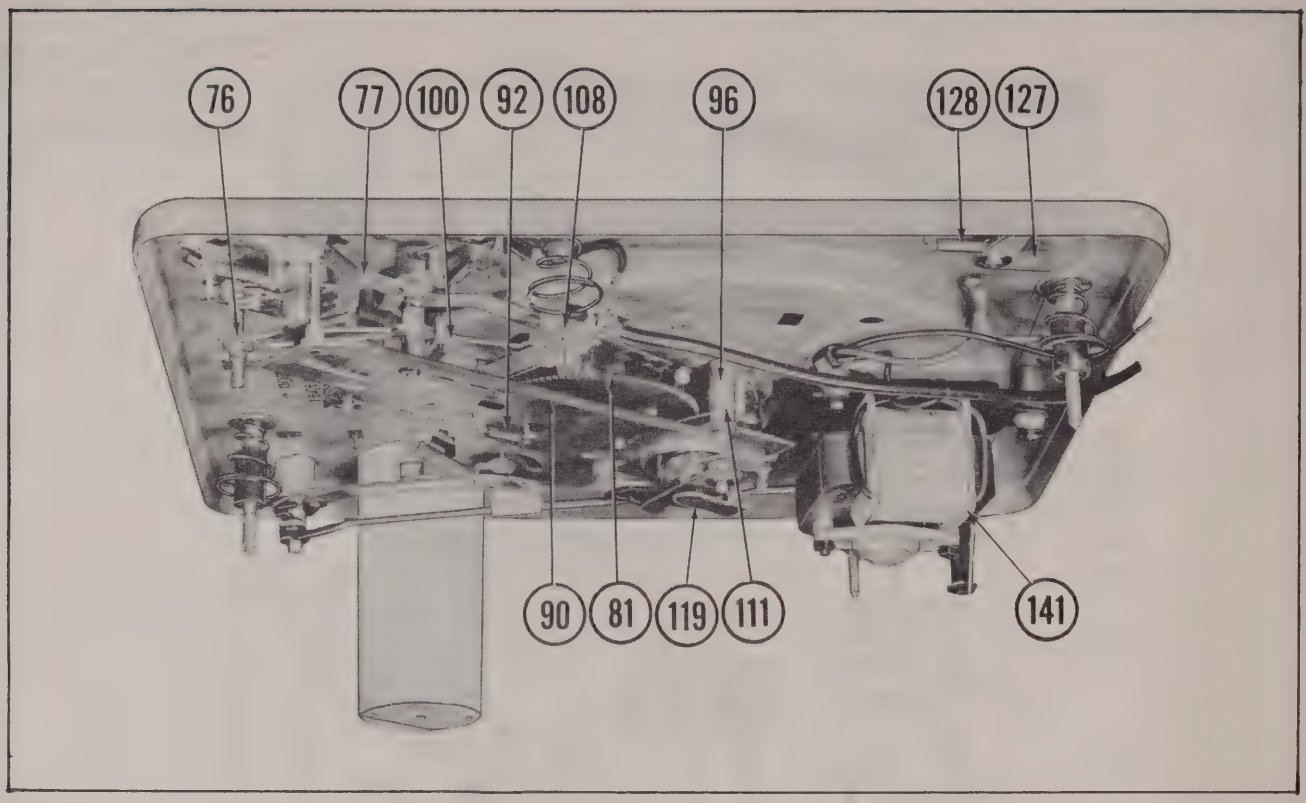



FIGURE 5

the shut-off lever (125). This shut-off lever in turn applies force to the arm on tone arm latch lever (58) through a spring, lever, and wire arrangement. At this moment cycling slide (90) has reached its outermost position and the arm on tone arm latch lever (58) is pushing upward on the pickup arm latch actuating lever (62) but is held from doing so by the knobbed end of the stud on the rear of cycling slide (90) which retards the movement of actuating lever (58) until cycling slide (90) has started its return trip.

The pickup arm latch actuating lever (58) then raises and the pickup arm land and plays the last record.

After the last record has played and the mechanism goes into another change cycle, cycling slide (90) starts its outward travel and when it approaches its outermost position the knobbed end of the stud on the rear of cycling slide (90) slides underneath and fails to contact pickup arm latch actuating lever (62) and as a result the arm on tone arm latch lever (58) remains unlatched. The pickup arm return lever (72) is now locked in position and cannot direct the pickup arm inward.

The pickup arm will therefore remain in a position directly above the arm rest and when the lift rod (26) rides down the incline portion on rear of cycling slide (90) the pickup arm sets on the rest but the turntable continues to rotate for an instant until the shut-off switch is actuated as described in the following paragraph.

When the pickup arm return lever (72) is latched, the short arm located on the rear of switch shut-off link (67) is held in such a position that the turned down ear on the front of link (67) makes contact with the escape lever (point "A" on exploded view) when

## ADJUSTMENTS

Stylus Sat-Down Adjustment –

When the pickup arm is mounted the clamp screw (16A) should seat in the depression in the pickup arm lever shaft, then only one landing adjustment is necessary. The landing position of the stylus is adjusted by means of round head screw (17) which is located at the left side of pickup arm mounting bracket (14). When the correct set-down point is obtained for one size record, the landing position for the other two sizes automatically maintained.

Place a 12 inch record on the turntable and cycle the changer by rotating the turntable by hand until the sytlus is just ready to set on the record. Then turn landing adjustment screw (17) so the stylus will set on the record midway between the outer edge and the starting groove.

Pickup Arm Height Adjustment –

The pickup arm height is adjusted by means of hex load screw (12) which is located on the underside of the pickup arm.

Cycle the changer by rotating the turntable by hand until the arm has reached its maximum height. Adjust screw (12) so that stylus is 1 3/8" above turntable.

Record Dropping Adjustment –

Eccentric stud (131) on the end of cycling slide (90) controls the time during cycling at which the record drops to the turntable.

Adjust stud (131) so that the record drops when

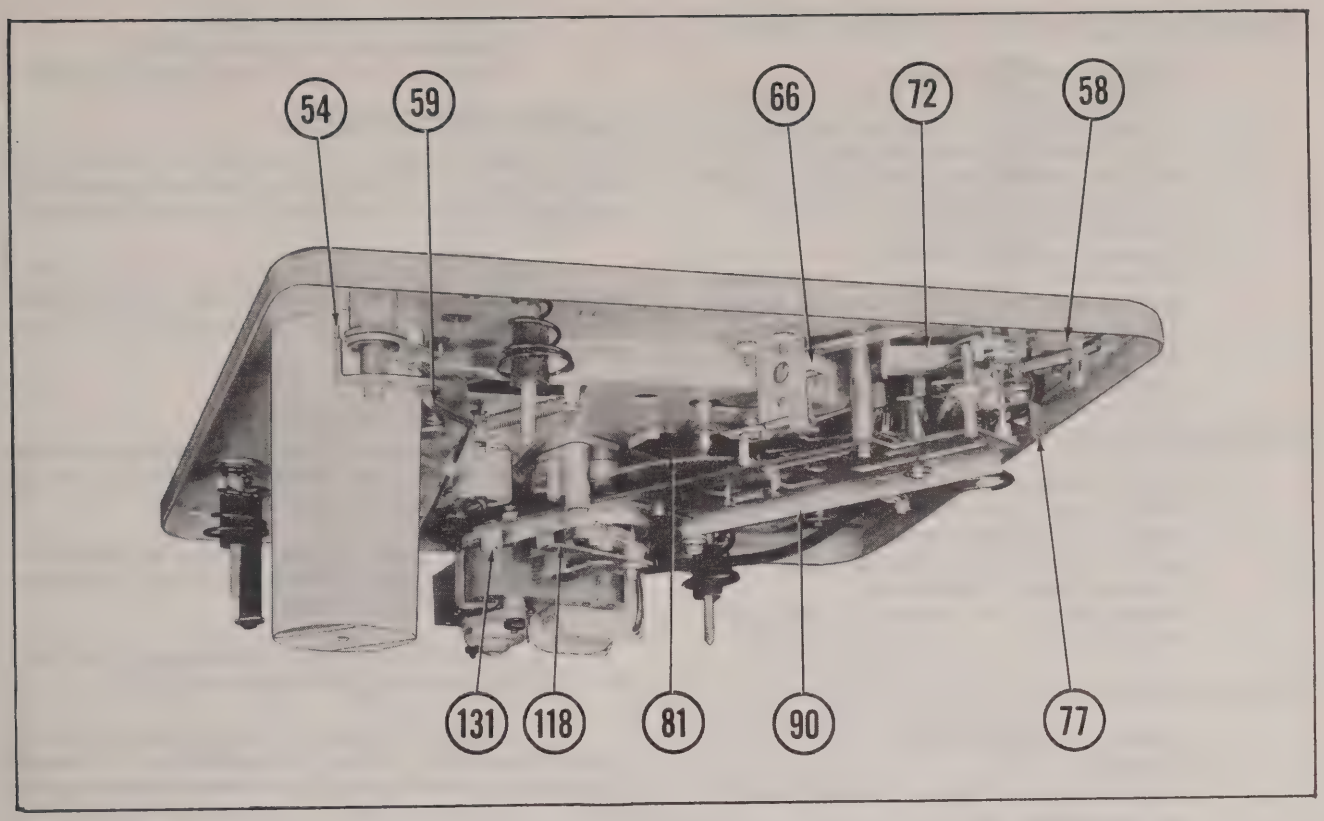



FIGURE 6

the pickup arm has moved to its maximum outward travel.

## TROUBLES AND REMEDIES

Turntable Does Not Revolve When Control Is Turned —

1. No current at motor.
   (a)Check so that current is reaching AC leads of changer.
   (b)Check so that switch is closing.
2. Motor defective.
   (a)Remove turntable to allow motor to operate without load. If current is reaching motor and drive spindle does not rotate, the motor is defective. Repair or replace.
3. Motor idler wheel not engaging turntable rim.
   (a)Check motor idler wheel assembly to determine if it is free to contact the motor shaft and turntable rim.
   (b)Wipe off inside rim of turntable to remove flock, or if oily, clean turntable rim and driving surfaces of motor with naptha or carbon tetrachloride.

Changer Does Not Cycle When Controls Is Turned To "Rej." —

1. The manual reject not actuating the trip mechanism.
   (a)Turn control lever (23) to the reject position, hold and see that trip slide actuating lever (31) has moved trip slide lever (77) to the rear. This should actuate the trip pawl intermediate lever (86) on gear (81), which will bring the spur or intermediate lever (86) into contact with the projection on the turntable hub.
   (b)Check for binding of the trip pawl assembly, trip slide lever (77), and the pivot points of connecting levers. If binding occurs, clean out all foreign matter and check for freedom.

Pickup Arm Strikes Records On Spindle —

1. Pickup arm height not adjusted properly.
   (a)See instructions for adjusting pickup arm height under "Adjustments."

"Wow" On Turntable Speed Variation —

1. Binding in turntable bearing.
   (a)Check the turntable bearing for freedom. Hold the motor idler wheel out of engagement with the turntable rim and spin the turntable by hand to see if it turns readily. If binding occurs, remove turntable and clean foreign matter from bearing, lubricate as instructed under "Lubrication".
2. Line voltage too low.
   (a)The line voltage should not be less than 105 volts or the turntable speed may be too slow.
3. Operating temperature too low.
   (a)If the machine has been stored in a cold place or operated in surroundings at a temperature of less than 60° F., the turntable speed may be too slow.
4. Turntable rim may be bent.
   (a)Straighten or replace.
5. Tire or idler wheel out of round, rough or improperly seated.
   (a)Replace
6. Motor not suspended properly.
   (a)Check that motor is equally suspended on all grommets.

Changer Does Not Stop After Playing Last Record –

1. Stabilizer arm (43) binding.
   (a)Record stabilizer arm (43) must drop below the off-set shelf on the spindle or the changer will not shut off.
2. Shut-off lever spring (130) stretched, disconnected or missing.
   (a)Repair or replace.
3. Transfer arm (127) binding
   (a)Check for foreign matter at pivot point.
4. Shut-off wire (95) disconnected or missing.
   (a)Replace or repair.
5. Return spring (60) or (61) missing.
   (a)Replace.

Pickup Skips Grooves –

1. Pickup arm horizontal bearing binding.
2. Pickup arm lift rod (26) binding.
3. Pickup arm height improperly adjusted.
   (a)See instructions for adjusting pickup arm height under "adjustments".
5. Stylus may be worn, broken, or improperly selected.

Slide Mechanism Jams –

1. Screws (124) may be loose.
   (a)Tighten
2. Defective teeth in either turntable hub (38) or cycling gear (81).
   (a)Replace
3. The 10" landing index lever may be bent causing end to jam cycling gear (81).
   (a)Replace or reform.

Records Fail To Separate Properly –

1. Spindle center post may be bent.
   (a)Reform or replace.
2. Eccentric stud improperly set.
   (a)Adjust eccentric stud (131).
3. Pushoff finger or pivot may bind.
   (a)Replace or reform finger (part of spindle).

10" Indexing Lever Adjustment –

Rubber bumper (97) can be rotated on the threaded end of 10" index lever (100) and provides a convenient means of adjustment for proper indexing.

Adjust rubber bumper (97) so it just touches the under side of a record that has been slightly tilted to produce approximately 1/16" clearance between the record and the turntable.

## LUBRICATION

These changers are properly lubricated when they leave the factory and additional lubrication should not be necessary for a long period of time.

1. A good grade of light machine oil should be used to oil the bearings of the drive motor. Use only one or two drops for each bearing.

2. On all other bearing surfaces use (*Sta-Put No. 320) or equivalent lubrication sparingly.

3. Apply a medium weight clinging type of grease (Sta-Put No. 512 or Cosmolube No. 1) to points of sliding contact including depressions on cycling gear (81).

Note: It is important that the drive motor spindle, all rubber tires and the inside rim of the turntable be kept clean and free of oil and grease. Carbon tetrachloride or naptha is recommended for cleaning these parts.

* Sta-Put and cosmolube can be purchase from E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia, Pa. and their distributors.

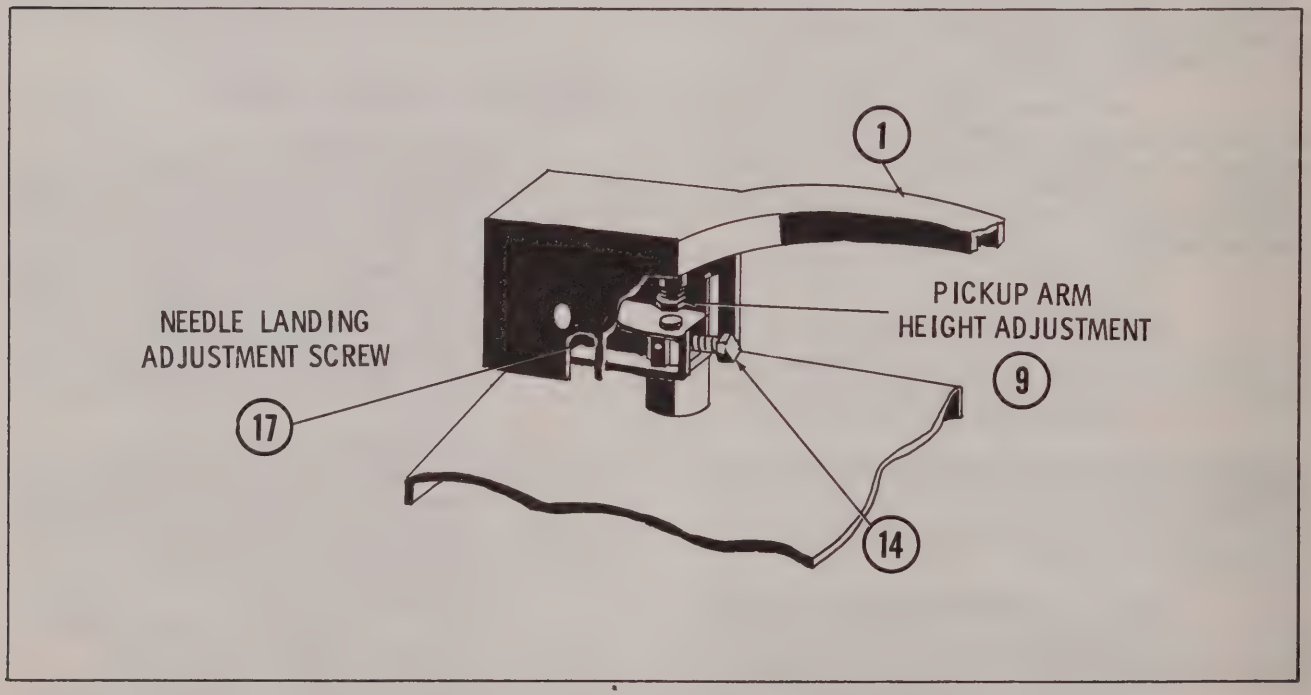



FIGURE 7

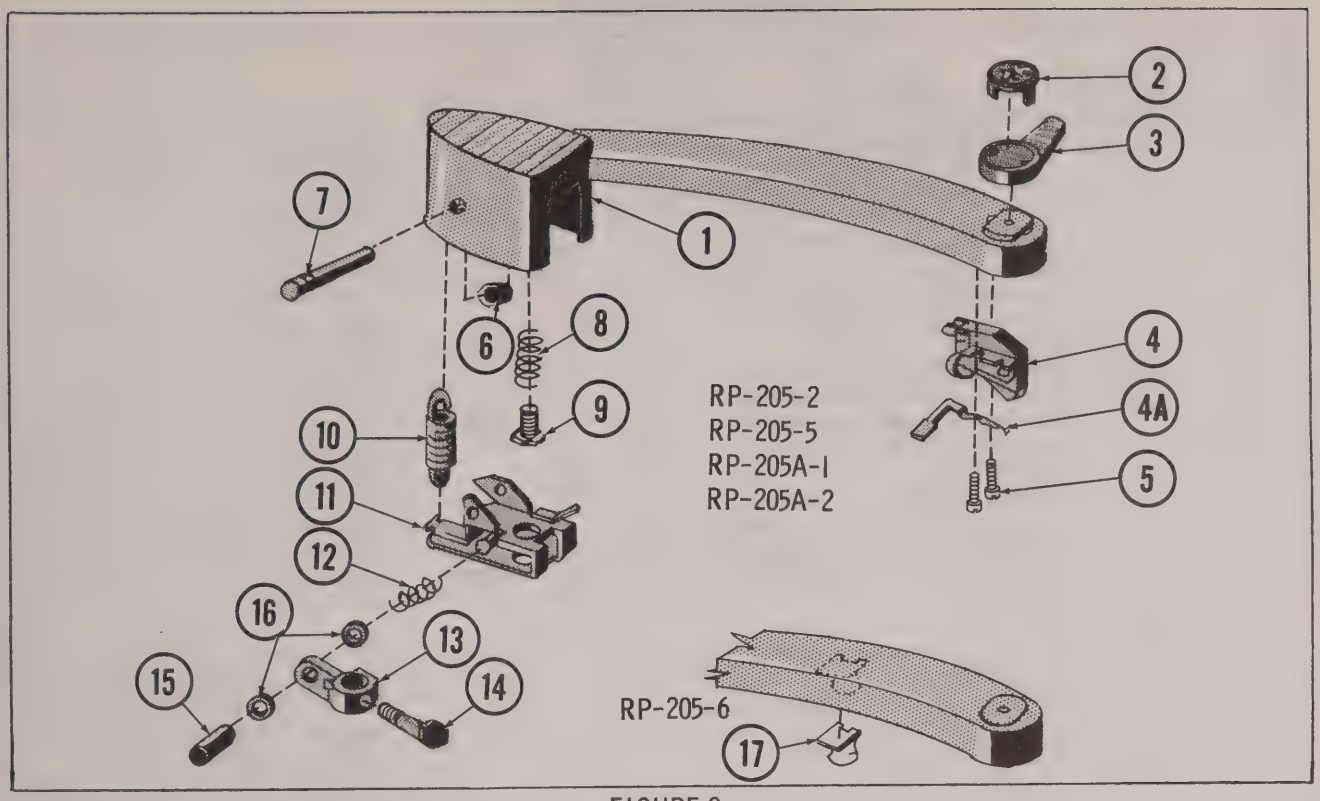



FIGURE 8

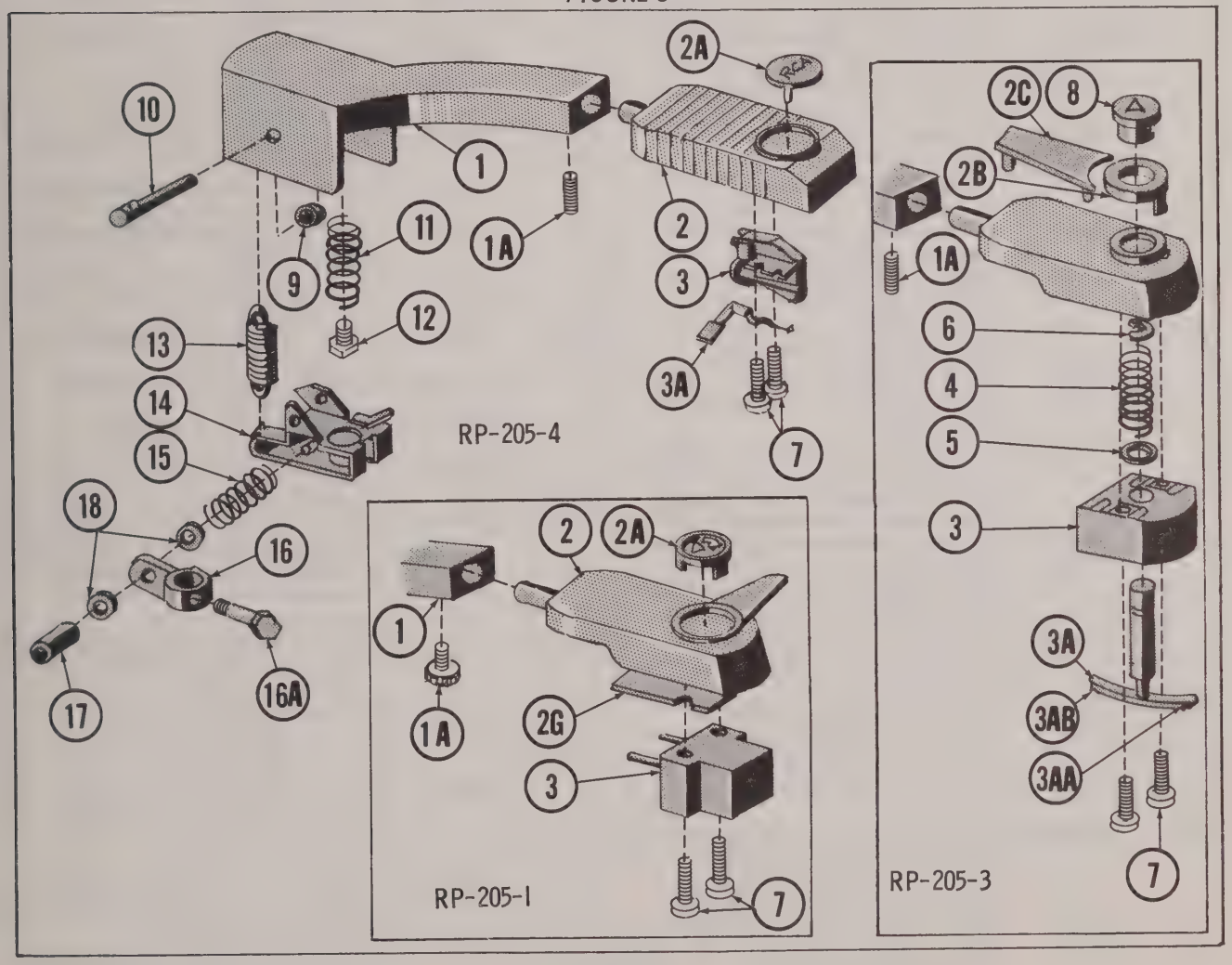



FIGURE 9

# PICKUP ARM PARTS LIST

| Ref. No. | Part No. | Description |
|---|---|---|
| | | Pickup & Arm Assemblies<br>For: RP-205-1<br>RP-205-3 (MI-12807-A)<br>RP-205-4 (MI-12820-B) |
| 1 | 102930 | Arm - Pickup arm shell only - less detachable pickup housing - with counterbalance spring retainer-charcoal gray - for RP-205-1 |
| | 102966 | Arm - Pickup arm shell only - less detachable pickup housing - with counterbalance spring retainer-charcoal gray - for RP-205-3 |
| | 102964 | Arm - Pickup arm shell only - less detachable pickup housing - with counterbalance spring retainer-antique white - for RP-205-4 |
| 1A | 100747 | Screw - #6-32 pickup head retaining thumbscrew - for RP-205-1 |
| | 78767 | Screw - #6-32 x 1/8" lg. pickup head retaining setscrew - for RP-205-3 and RP-205-4 |
| 2 | 102920 | Housing - Pickup head housing - charcoal gray - with lift (less pickup & emblem) for RP-205-1 |
| | 102967 | Housing - Pickup head housing - charcoal gray - for RP-205-3 |
| | 102965 | Housing - Pickup head housing - antique white - for RP-205-4 |
| 2A | 102542 | Emblem - Trademark emblem - for RP-205-1 |
| 2A | 100923 | Monogram - Trademark monogram - for RP-205-4 |
| 2B | 103029 | Escutcheon - Stylus indicator escutcheon for RP-205-3 |
| 2C | 100563 | Cover - Ornamental cover for pickup head - for RP-205-3 |
| 2G | 101786 | Counterbalance plate for 3 mil. pickup head - for RP-205-1 |
| 3 | 102956 | Pickup - Pickup for "45" - "33"-"16" with 1 mil. diamond stylus - for RP-205-1 |
| 3 | MI-12110-A | Pickup - Reluctance pickup complete with 1 mil. diamond & 3 mil. synthetic sapphire stylii, mounting screws & knob for RP-205-3 |
| | MI-12112-A | Pickup - Reluctance pickup complete with 1 mil. & 3 mil. synthetic sapphire stylii, mounting screws & knob - for RP-205-3 |
| | 100653 | Pickup - Ceramic pickup with dual synthetic sapphire stylus - for RP-205-4 |
| 3A | MI-12111-A | Stylus - Stylus assembly for MI-12110-A pickup - complete with 1 mil. diamond and 3 mil. synthetic sapphire cli-in stylii. |
| 3A | MI-12113-A | Stylus - Stylus assembly for MI-12112-A pickup complete with 1 mil. and 3 mil. synthetic sapphire clip-in stylii. |
| 3AA | 101672 | Stylus - "Clip-in" 3 mil. synthetic sapphire stylus for MI-12110-A & MI-12112-A |
| 3AB | 211951 | Stylus - "Clip-in" 1 mil. diamond stylus for MI-12110-A pickup |
| | 101671 | Stylus - "Clip-in" 1 mil. synthetic sapphire stylus - for MI-12112-A pickup |
| 3A | 78827 | Stylus - Dual synthetic sapphire stylus - for RP-205-4 |
| 4 | 78772 | Spring - Tension spring for mounting of MI-12111-A and MI-12113-A stylus assemblies |
| 5 | 78773 | Washer - Flat metal washer for mounting of MI-12111-A & MI-12113-A stylus assemblies |
| 6 | 78774 | Washer - "C" washer for mounting of MI-12111-A & MI-12113-A stylus assembly |
| 7 | 100561 | Screw - #4-40 x 5/16" fil. hd. pickup mounting screw (2 req'd) - for RP-205-1 |
| | 100745 | Screw - #4-40 x 1/4" fil. hd. pickup mounting screw (2 req'd) - for RP-205-3 |
| | 74410 | Screw - #4-40 x 3/16" fil. hd. pickup mounting screw (2 req'd) for RP-205-4 |
| 8 | 100748 | Knob - Stylus selector knob for RP-205-3 |
| 9 | 78741 | Pivot - Brass pivot bearing |
| 10 | 78742 | Shaft - Pivot shaft |
| 11 | 78738 | Spring - Spring for height adjustment screw. |
| 12 | 78740 | Screw - Hex. hd. #6-32 height adjustment screw |
| 13 | | Spring - Counterbalance spring for RP-205-1 |
| | 100756 | Spring - Counterbalance spring for RP-205-3 |
| | 101265 | Spring - Counterbalance spring for RP-205-4 |
| 14 | 78734 | Bracket - Mtg. bracket ass'y. for pickup arm |
| 15 | 100999 | Spring - Landing adjustment screw spring |
| 16 | 78732 | Collar - Pickup arm mtg. collar - less screw |
| 16A | 79245 | Screw - #10-32 set screw for pickup arm collar |
| 17 | 101270 | Nut - Split nut for pickup arm landing adjustment |
| 18 | | Washer - Flat metal washer - bearing for split nut landing adjustment (2 req'd) |
| | | Pickup & Arm Assemblies<br>For: RP-205-2<br>RP-205-5<br>RP-205-6<br>RP-205A-1<br>RP-205A-2 |
| 1 | 102473 | Arm - Pickup arm shell only, with counterbalance spring retainer - aluminum - antique white |
| 2 | 102542 | Emblem - Trademark emblem-black over polished brass for RP-205-2, RP-205-5 |
| | | Monogram - "RCA" trademark monogram - for RP-205A-1 & |

## PICKUP ARM PARTS LIST (CON'T.)

| Ref. No. | Part No. | Description |
|---|---|---|
| | | RP-205A-2 |
| 3 | 102543 | Lift - Pickup arm lift, aluminum - polished gold finish |
| 4 | 100653 | Pickup - Ceramic pickup with dual stylus |
| 4A | 78827 | Stylus - Dual stylus assembly with two synthetic sapphire stylii |
| 5 | 74410 | Screw - Pickup mounting screw #4-40 fillister head |
| 6 | 102474 | Pivot - Bearing for pivot shaft |
| 7 | 102475 | Shaft - Pivot shaft |
| 8 | 78738 | Spring - Spring for height adjustment screw |
| 9 | 78740 | Screw - Hex. hd. #6-32 height adjustment screw |
| 10 | 101265 | Spring - Counterbalance spring |
| 11 | 120472 | Bracket - mounting bracket for pickup arm |
| 12 | 100999 | Spring - Landing adjustment screw spring |
| 13 | 78732 | Collar - Pickup arm mounting collar - less screw |
| 14 | 79245 | Screw - #10-32 set screw for pickup arm collar |
| 15 | 101270 | Nut - Split nut for pickup arm landing adjustment |
| 16 | | Washer - Flat metal washer (2 Req'd) |
| 17 | 101741 | Pickup arm retaining clip for RP-205-6 only |

## MOTOR REPLACEMENT PARTS LIST

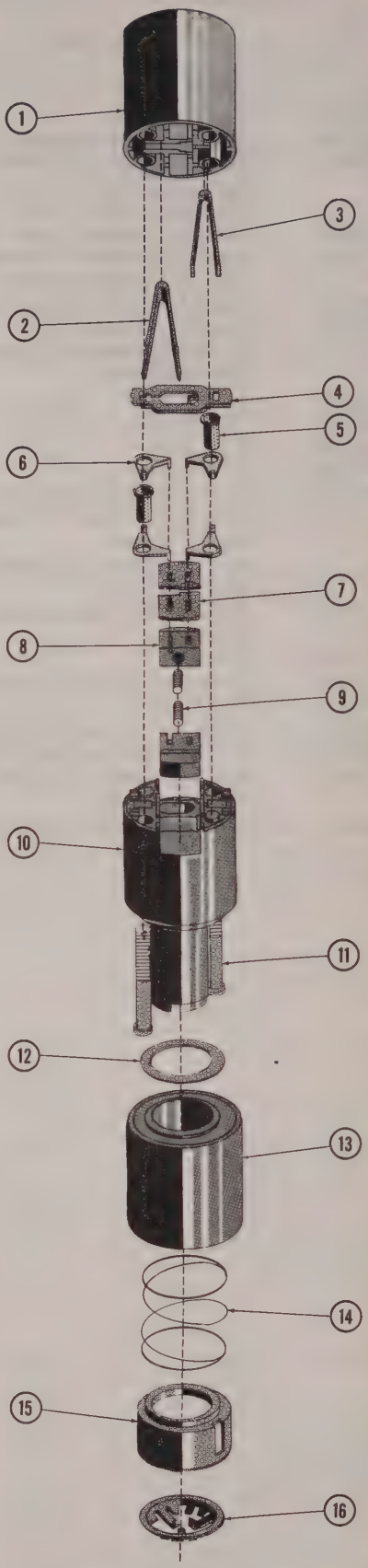
| Ref. No. | Part No. | Description |
|---|---|---|
| | | (For motor stamped 936173-1 190) |
| | 102934 | Wheel - Idler wheel |
| | 76749 | Spring - Spring pulley for motor shaft |
| | 102943 | Pulley - 78RPM drive pulley |
| | 120942 | Pulley - 45RPM drive pulley |
| | 102941 | Pulley - 33 1/3RPM drive pulley |
| | 102944 | Pulley - 16RPM drive pulley |
| | 102541 | Motor - 4 speed motor ass'y. complete - 115 volts,60 cycles |
| | | (For motor stamped 936173-1 170) |
| | 102968 | Wheel - Idler wheel |
| | 79967 | Sleeve - Sleeve pulley for 50 cycle operation |
| | 78522 | Sleeve - Sleeve pulley for 60 cycle operation |
| | 78525 | Pulley - 33 1/3RPM pulley assembly |
| | 78526 | Pulley - 45RPM pulley ass'y. |
| | 78527 | Pulley - 78RPM pulley ass'y. |
| | 102972 | Pulley - 16RPM pulley ass'y. |
| | 102541 | Motor - 4 speed motor ass'y. complete 115 volts, 60 cycles |
| | | (For motors stamped 971592-1 170 115V. 60 cycle and 972592-2 107 115 230V. 50 cycle) |
| | | Parts same as listed for motor stamped 936173-1 107 except: |
| | 100989 | Spring sleeve for 50 cycle operation |
| | 100988 | Spring sleeve for 60 cycle operation |
| | 102900 | Motor - 115/230 V., 60 cycle motor complete. Motor - 115/230 V., 50 cycle motor. Use 102900 motor and 100989 spring. |
| | | (For motor stamped 971584-1 115V. 60 cycle.) |
| | 102934 | Wheel - Idler wheel |
| | 102960 | Sleeve - Sleeve pulley for motor shaft (16 2/3RPM operation. |
| | 102959 | Pulley - Motor shaft pulley - less set screw |
| | 78767 | Screw - Set screw for motor shaft pulley |
| | 102943 | Pulley - 78RPM turret pulley |
| | 102942 | Pulley - 45RPM turret pulley |
| | 102941 | Pulley - 33 1/3RPM turret pulley |
| | 102957 | Pulley - 16 2/3RPM turret pulley |
| | 102919 | Motor - Motor assembly complete - 115 volt, 60 cycle - 4 pole, 4 speed |
| | | 115 volt, 50 cycle conversion parts: |
| | 103026 | Sleeve - Sleeve pulley for motor shaft (16 2/3RPM operation) replaces #102960. |
| | 103027 | Pulley - Motor shaft pulley - less screw - replaces #102959 |
| | 79249 | Resistor - Flexible wire wound resistor, 60 ohms, ±10%, 5 watt (used in series with motor winding. |

| Ref No. | Part No. | Description |
|---|---|---|
| 19 | 78654 | Ring - Retaining ring for turntable |
| 20 | 102537 | Rubber mat for turntable Stock #102535 |
| 21 | 102963 | Metal turntable - charcoal gray with rubber mat, brass center disc and turntable support - for RP-205-4 |
| | 102927 | Metal turntable - charcoal gray with rubber mat, brass center disc and turntable support for RP-205-1 & RP-205-3 |
| | 102535 | Metal turntable - antique white enamel - less support and mat for RP-205-2, RP-205-5, RP-250A-1, RP-205A-2 |
| 22 | 102528 | Knob - Speed control knob and shaft assembly |
| 23 | 102527 | Lever - "On-Off Rej." control lever and shaft assembly |
| 24 | 77033 | Nameplate - "RCA Victor" nameplate - gold finish - for RP-205-2, RP-205A-1, RP-205-5, and RP-205A-2 |
| | 102925 | Nameplate -"RCA Victor" nameplate - charcoal gray for RP-205-1 |
| 25 | 102526 | Escutcheon - Polystyrene control escutcheon & centerpost well - antique white with gold markings for all models except RP-205-1 |
| | 102929 | Escutcheon - Polystyrene control escutcheon & centerpost well - metalized gold & charcoal gray with gold markings - for RP-205-1 |
| 26 | 78672 | Rod - Pickup arm lift rod |
| 27 | 35969 | "C" washer |
| 28 | 78649 | Flat Washer |
| 29 | 102539 | Motorboard assembly - for all models except RP-205-1 |
| | 102924 | Motorboard assembly - for RP-205-1 |
| 30 | 102530 | Reject link with stud |
| 31 | | Lever - (Pt of motorboard) |
| 32 | 102544 | Switch actuating lever (pt. of motorboard) |
| 33 | 78747 | Spring |
| 34 | 78709 | Spring |
| 35 | 102533 | Wire - Reject operating wire |
| 36 | 74337 | Speed Nut |
| 37 | 78659 | Bearing pin for landing selector levers |
| 38 | 102536 | Turntable support Stock # 10235 |
| 39 | | #8-32 Hex Nut |
| 40 | 78720 | Felt Washer |
| 41 | 78660 | Thrust bearing on turntable |
| 42 | 79242A | Spindle assembly |
| 43 | 102524 | Stabilizer arm assembly - for all models except RP-205-1 |
| | 102931 | Stabilizer arm assembly for RP-205-1 |
| 44 | 102525 | Aluminum Cap. |
| 45 | 100994 | Rubber Ring |
| 46 | 102540 | Stabilizer arm support - for all models except for RP-205-1 |
| | | Stabilizer arm support for RP-205-1 |
| 47 | 78708 | Return spring for stabilizer arm |
| 48 | | Flat washer |
| 49 | 33726 | "C" Washer |
| 50 | | "C" Washer |
| 51 | | Washer |
| 52 | | Idler Wheel (See motor parts list) |
| 53 | 78668 | Reject lever arm assembly |
| 54 | 102531 | Motor speed shift lever |
| 55 | 33139 | Rubber grommet for motor speed shift |
| 56 | 102532 | Control link for "On-off-rej." |
| 57 | 33726 | "C" Washer |
| 58 | 78669 | Pickup arm latch lever ass'y. (Part of motorboard) |
| 59 | 102926 | Motor speed selector for RP-205-1, RP-205-3 and RP-205-4 |
| | 102534 | Motor speed selector for RP-205-2, RP-205A-1 and RP-205A-2 |
| 60 | 78698 | Return spring for pickup arm latch |
| 61 | 100987 | Tension spring for pickup arm latch actuating lever |
| 62 | 78658 | Actuating lever for pickup arm latch |
| 63 | 78651 | "C" Washer |
| 64 | | Spring |
| 65 | 77586 | "C" Washer |
| 66 | 78664 | Switch shut-off link bracket |
| 67 | 78695 | Switch shut-off link assembly |
| 68 | 78713 | Return spring for pickup arm return lever |
| 69 | | Lock-Washer |
| 70 | | #6-32 Nut for mtg.switch shut-off link bracket |
| 71 | | "C" Washer |
| 72 | 78655 | Pickup arm return lever ass'y. |
| 73 | 78699 | Spring |
| 74 | 78724 | Actuating lever assembly for pickup arm return |
| 75 | 78653 | Retaining ring for pickup arm return actuating lever |
| 76 | 79091 | Pickup arm lever |
| 77 | 78688 | Trip slide lever |
| 78 | 100723 | Index lever assembly - chrome plated - 12" recors landing selector |
| 79 | | Washer |
| 80 | | #6-32 Nut |
| 81 | 78691 | Cycling gear - less pawl levers |
| 82 | 78651 | "C" Washer |
| 83 | 79240 | Flat Washer |
| 84 | 78727 | Trip pawl pressure spring |
| 85 | 78725 | Trip pawl actuating lever |
| 86 | 78726 | Trip pawl intermediate lever |
| 87 | 35969 | "C" Washer |
| 88 | 78651 | "C" Washer |
| 89 | | Steel wire for slide |
| 90 | 79794 | Cycling slide assembly |
| 91 | 33726 | "C" Washer |
| 92 | 78705 | Spring |
| 93 | 102529 | Reject & switch control pivot lever with studs |
| 94 | 78710 | Return spring for switch and |

| Ref. No. | Part No. | Description |
|---|---|---|
| | | reject lever |
| 95 | 78679 | Shut-off wire |
| 96 | 100735 | Spindle bearing support |
| 97 | 100913 | Rubber cushion & screw ass'y. for index lever |
| 98 | | Screw for index lever |
| 99 | 78689 | Landing selector lever |
| 100 | 78690 | Index lever for 10" records - with adjustable cushion |
| 101 | 78712 | Index lever return spring |
| 102 | 78661 | Landing selector lever |
| 103 | 78653 | Retaining ring for landing selecting lever |
| 104 | 78719 | Flat Washer |
| 105 | 33726 | "C" Washer |
| 106 | 100157 | Flat Washer |
| 107 | 33726 | "C" Washer |
| 108 | 78676 | Muting switch assembly |
| 109 | | H.H.S.T. #8 x 3/8" screw for muting switch |
| 110 | | #6 Flat Washer (3 req'd) for slide mounting |
| 111 | 79352 | Formed wire spring for slide assembly |
| 112 | 78656 | Spindle |
| 113 | 78745 | Actuating spring for reset lever |
| 114 | 78651 | "C" Washer |
| 115 | 78694 | Pivot pin for spindle reset lever |
| 116 | 100342 | $\frac{1}{2}$" - 32 retaining nut for spindle |
| 117 | 78711 | Return spring for spindle operating arm |
| 118 | 78670 | Spindle operating arm assembly |
| 119 | 78657 | Spindle rest lever |
| 120 | 79092 | Flat Metal Washer |
| 121 | 33726 | "C" Washer |
| 122 | | #6 Flat Washer |
| 123 | | #6 Lockwasher |
| 124 | | #6 - 32 x 5/16" H.H. screw |
| 125 | 78674 | Shut-off lever assembly |
| 126 | | #8 x 3/8" hex head S.T. screw |
| 127 | 78675 | Transfer arm for shut-off mechanism |
| 128 | 78714 | Return spring for transfer arm |
| 129 | 35969 | "C" Washer |
| 130 | 78681 | Shut-off lever spring |
| | | Motor Ass'y stamped 9361734 190 : |
| 131 | 102940 | Speed pulley mounting plate (less pulleys) |
| 132 | 102939 | Speed shift lever |
| 133 | 102936 | Idler wheel support plate |
| 134 | 78374 | Idler support spring |
| 135 | 78648 | Idler wheel support link |
| 136 | 76755 | Detent spring |
| 137 | 77134 | Speed shift lever mounting collar (nut) |
| 138 | 76751 | Rubber grommet |
| 139 | | Washer |
| 140 | | "C" Type retaining washer |
| 141 | 102541 | Motor - 4 speed motor ass'y. complete - 115 volts, 60 cycles |

## 45RPM CENTERPOST PARTS LIST

| Ref. No. | Part No. | Description |
|---|---|---|
| | 79096C | Centerpost ass'y. complete |
| 1 | 100499 | Nose cap - red - polystyrene |
| | 100500 | Nose cap - black - polystyrene |
| 2 | 100501 | Nose cap spring, 5/16" wide |
| 3 | 100498 | Slide return spring |
| 4 | 100494 | Record separators actuator slide |
| 5 | 100497 | Actuating lever mounting sleeve |
| 6 | 100495 | Slide actuating pivot lever (2 req'd) |
| 7 | 100493 | Record separator knife (2 req'd) |
| 8 | 100491A | Record support shelves - L.H. & R.H. |
| 9 | 100492 | Record support shelf spring |
| 10 | 101566A | Centerpost body assembly |
| 11 | 100502 | Screw - 4-24 x 1 3/8" S.T. |
| 12 | 100503 | Flat metal washer |
| 13 | 101567 | Rotor |
| 14 | 100504 | Rotor lift spring (coil) |
| 15 | 100505A | Rotor lift - black metal |
| 16 | 100506 | Rotor lift retainer |

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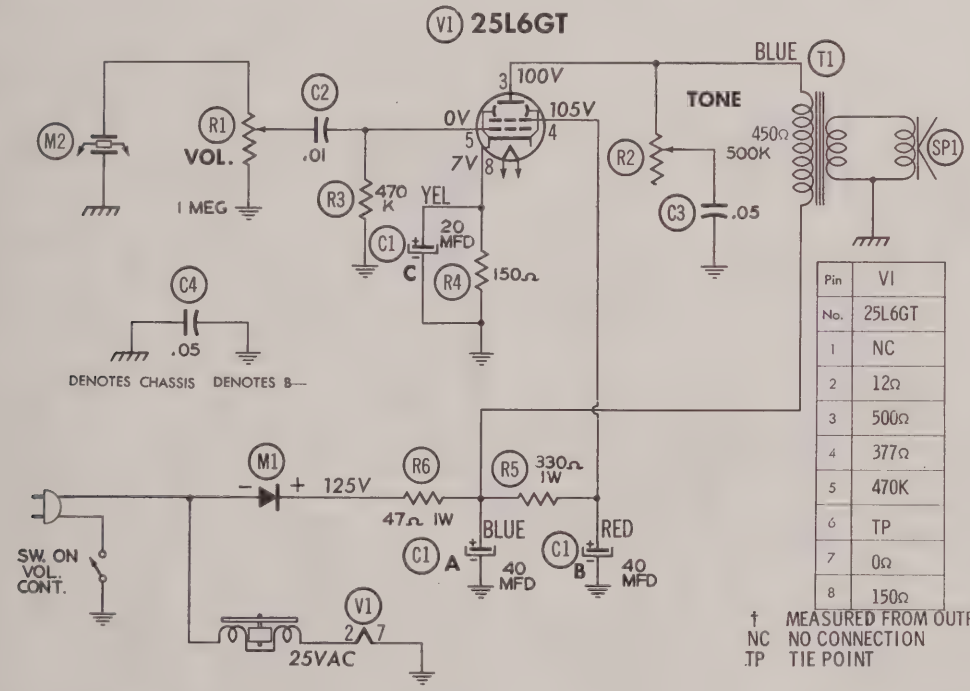
45RPM CENTERPOST

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

STEELMAN
MODEL 3D14U

| | |
|---|---|
| TRADE NAME | Steelman Model 3D14U |
| MANUFACTURER | Steelman Phono & Radio Co., Inc., 12-30 Anderson Ave., Mt. Vernon, N.Y. |
| TYPE SET | AC Operated Phono Amplifier With 3 Speed Manual Record Player |
| TUBES (One) | Type 25L6GT Output |
| POWER SUPPLY | 110-120 Volts AC-60 Cycles RATING .34 Amp. @ 117 Volts AC |




| Pin No. | V1 25L6GT |
|---|---|
| 1 | NC |
| 2 | 12Ω |
| 3 | 500Ω |
| 4 | 377Ω |
| 5 | 470K |
| 6 | TP |
| 7 | 0Ω |
| 8 | 150Ω |

† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION
TP TIE POINT

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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# PARTS LIST AND DESCRIPTIONS

## TUBES ( GENERAL ELECTRIC, SYLVANIA )

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | Output | 25L6GT | |

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| | | | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT. | STEELMAN PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A | 40 | 150 | | PRS150V4040 | BBRT44215 | TCT3116 | TDLT-4 | FMT-315 | TVA-3448 |
| B | 40 | 150 | | 20 | | | | | |
| C | 20 | 150 | | | | | | | |

## FIXED CAPACITORS

**Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | STEELMAN PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C2 | .01 | 400 | | BPD-01 | D6-103 | CUB4S1 | ED-01 | GEM-411 | 4TM-S1 | |
| C3 | .05 | 400 | | BPD-05 | DF-503 | CUB4S5 | | GEM-415 | 4TM-S5 | |
| C4 | .05 | 400 | | BPD-05 | DF-503 | CUB4S5 | | GEM-415 | 4TM-S5 | |

## CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| | RESISTANCE | WATTS | STEELMAN PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | |
| R1A | 1Meg | ½ | | AB-70 | A47-1Meg-Z | Q13-137 | U-53 | Volume |
| B | Shaft | | | AK-4 | KSS-3 | Not Req. | Not Req. | |
| C | Switch | | | KB-1 | SWE-12 | 76-1 | US-26 | |
| R2A | 500K | ½ | | AB-59 | A47-500K-S | Q11-133 | U-50 | Tone |
| B | Shaft | | | AK-4 | KSS-2 | Not Req. | Not Req. | |

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | STEELMAN PART No. | IRC PART No. | |
| R3 | 470K | | | BTS-470K | |
| R4 | 150Ω | | | BTS-150 | |

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | STEELMAN PART No. | IRC PART No. | |
| R5 | 330Ω | 1 | | BW-1-330 | |
| R6 | 47Ω | 1 | | BTA-47 | |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | STEELMAN PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T1 | 1930Ω | 3-4Ω | | Z1101 | A-3025 | A-3332 | 24S50① | S-12X | ① Drill new mounting hole. |

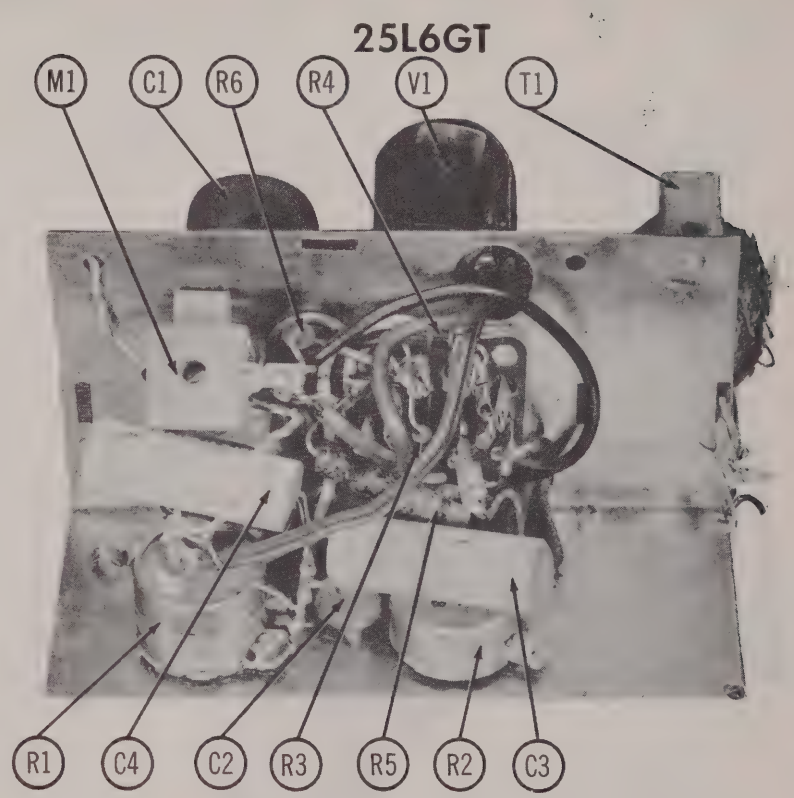
## SPEAKER

| ITEM No. | TYPE | | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|
| | SIZE | FIELD | V. C. IMP. | STEELMAN PART No. | QUAM PART No. | |
| SP1 | 4" | PM | 3-4Ω | | 4A07 | |

## SELENIUM RECTIFIER

| ITEM No. | RATING | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|
| | CURRENT | STEELMAN PART No. | FEDERAL PART No. | INTERNATIONAL PART No. | MALLORY PART No. | RADIO RECEPTOR PART No. | SARKES TARZIAN PART No. | |
| M1 | .050A | | 1263A | RS050 | 6S65 | 8J1 | 65 | |

# CHASSIS—BOTTOM VIEW




## PHONO CARTRIDGE

| ITEM No. | REPLACEMENT DATA | | | | | REMARKS |
|---|---|---|---|---|---|---|
| | STEELMAN PART No. | ASTATIC PART No. | | ELECTRO-VOICE PART No. | | |
| | | CARTRIDGE | NEEDLE | CARTRIDGE | MOUNT | |
| M2 | | 66-TS | K and K-78 | | | * Complete tone arm and cartridge assembly |
| | | *P66T | | *24H60 | | |

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

## PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

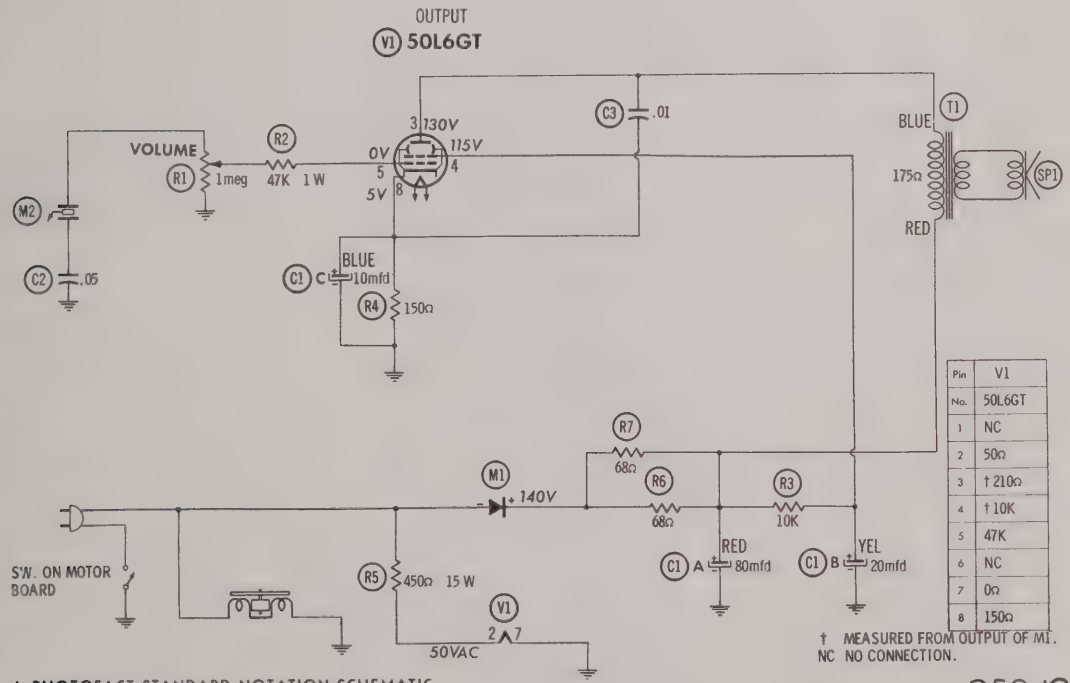
| ITEM No. | REPLACEMENT DATA | | | REMARKS |
|---|---|---|---|---|
| | STEELMAN PART No. | JENSEN PART No. | WALCO PART No. | |
| M3 | | *A-78 or †A-67 or ♦A-67D And *A-76LP or †A-67LP or ♦A-67LPD | *W-39A or *W-39MGA | * Metal † Jewel ♦ Diamond |

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

TRAV-LER
MODEL 7075

| | |
|---|---|
| TRADE NAME | Trav-Ler Model 7075 |
| MANUFACTURER | Trav-Ler Radio & Tel. Corp., 571 W. Jackson Blvd., Chicago, Illinois |
| TYPE SET | AC Operated Phono Amplifier With 3 Speed Automatic Record Changer |
| TUBES (One) | Types 50L6GT Output |
| POWER SUPPLY | 110-125 Volts AC-60 Cycle RATING .25 Amp. @ 117 Volts AC |

RECORD CHANGER - MONARCH MODEL VA6




| Pin No. | V1 50L6GT |
|---|---|
| 1 | NC |
| 2 | 50Ω |
| 3 | † 210Ω |
| 4 | † 10K |
| 5 | 47K |
| 6 | NC |
| 7 | 0Ω |
| 8 | 150Ω |

† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION.

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# PARTS LIST AND DESCRIPTIONS

## TUBES ( GENERAL ELECTRIC, SYLVANIA )

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | Output | 50L6GT | |

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| | | | |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT. | TRAV-LER PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A | 80 | 150 | EC-48 | PRS150/25V | BBRQ53215C | | CDB-T-1002 | CST-534 | R2311 * |
| B | 20 | 150 | | 8040/20 | | | | | |
| C | 10 | 25 | | | | | | | |

* Non-catalog item.

## FIXED CAPACITORS

**Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | TRAV-LER PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C2 | .05 | 400 | | BPD-05 | DF-503 | CUB4S5 | | GEM-415 | 4TM-S5 | |
| C3 | .01 | 400 | | BPD-01 | D6-103 | CUB4S1 | ED-01 | GEM-411 | 4TM-S1 | |

## CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| | RESIST-ANCE | WATTS | TRAV-LER PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | |
| R1A | 1Meg | 1/2 | VC-79 | AB-70 | A47-1Meg-Z | Q13-137 | U53 | Volume |
| B | Shaft | | | AK-4 | KSS-3 | Not Req. | Not Req. | |

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | TRAV-LER PART No. | IRC PART No. | |
| R2 | 47K | 1 | | BTA-47K | |
| R3 | 10K | | | BTS-10K | |
| R4 | 150Ω | | IR-14 | BTS-150 | |

| ITEM No. | RATING | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|
| | OHMS | WATT | TRAV-LER PART No. | IRC PART No. | |
| R5 | 450Ω | 15 | | | |
| R6 | 68Ω | | | BTS-68 | |
| R7 | 68Ω | | | BTS-68 | |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. | TRAV-LER PART No. | Halldorson PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T1 | 2450Ω | 3-4Ω | Part of Spkr. SPK-22 | Z1101 | A-3025 | A-3332 | 26S58 ① | S-12X | ① Drill new mounting hole. |

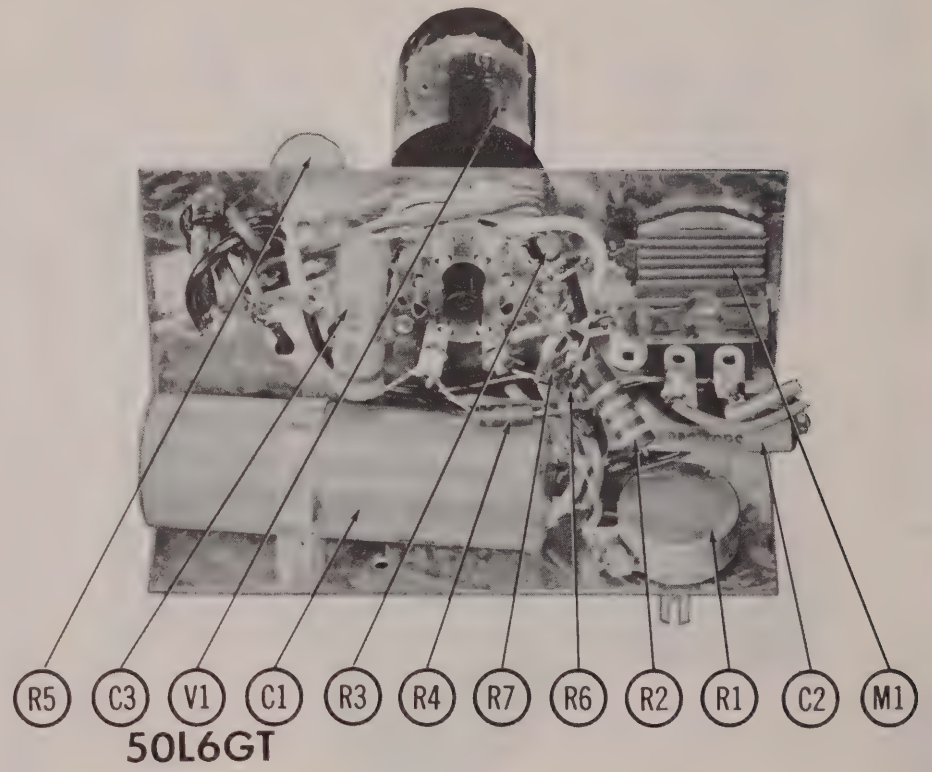
## SPEAKER

| ITEM No. | TYPE | | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|
| | SIZE | FIELD | V. C. IMP. | TRAV-LER PART No. | QUAM PART No. | |
| SP1 | 4" | PM | 3-4Ω | SPK-22 ① | 4A07 | ① Includes T1 |

## SELENIUM RECTIFIER

| ITEM No. | RATING | REPLACEMENT DATA | | | | | | NOTES |
|---|---|---|---|---|---|---|---|---|
| | CURRENT | TRAV-LER PART No. | FEDERAL PART No. | INTERNATIONAL PART No. | MALLORY PART No. | RADIO RECEPTOR PART No. | SARKES TARZIAN PART No. | |
| M1 | .052A | SR-3 | 1003A | RS075Q | 6S75 | 5M4 | 75 | |

# CHASSIS—BOTTOM VIEW




## PHONO CARTRIDGE

| ITEM No. | REPLACEMENT DATA | | | | | REMARKS |
|---|---|---|---|---|---|---|
| | TRAV-LER PART No. | ASTATIC PART No. | | ELECTRO-VOICE PART No. | | |
| | | CARTRIDGE | NEEDLE | CARTRIDGE | NEEDLE | |
| M2 | | 310-TB | N-8-1 | | | |
| | | | N-8-3 | | | |

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

## PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

| ITEM No. | REPLACEMENT DATA | | | REMARKS |
|---|---|---|---|---|
| | TRAV-LER PART No. | JENSEN PART No. | WALCO PART No. | |
| M3 | | †CR-55 or ♦CR-55D | †W-64S or ♦W-64D | 78RPM Needle |
| | | †CR-55LP or ♦CR-55LPD | †W-64MGS or ♦W-64MGD | 33 1/3 - 45 RPM Needle |

† Jewel ♦ Diamond

PHOTOFACT* Folder
*TRADE MARK

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

WESTINGHOUSE MODEL H21T107B (Ch. V-2346-26)

| TRADE NAME | Westinghouse | MODELS | CHASSIS |
|---|---|---|---|
| | | H21K114B, H21KR190, 191 | V-2346 |
| | | H21K111A, 112A, H21T107A, 108A | V-2346-21 |
| | | H21T101B | V-2346-25 |
| | | H21K112B, 113B, H21T107B, 108B | V-2346-26 |
| | | H21KR113A, 114A, 115A, 116A | V-2346-27 |
| | | H21KR113F, 114F | V-2346-29 |
| | | H21K194, C, H21T180, 185 | V-2346-41 |
| | | H21T180D | V-2346-45 |
| | | H21KR189, H21TR181, C, 182, 188 | V-2346-47 |
| | | H21K185, A, B, C, E, 186, A, B, 187, A, B, H21T180B, 185B | V-2346-61 |
| | | H21T180A | V-2346-65 |
| | | H21KR188, A, B, H, 189A, G, H, H21TR181A, 182A, B, C, 182A, B, C, 184A, C | V-2346-67 |
| | | H21K194, C | V-2346-68 |
| | | H24K126B, E, 127B, 128B | V-2347 |
| | | H24KR126A | V-2347-27 |
| | | H24KR126F, 127F | V-2347-29 |
| | | H21KRU190, H21KU111A | V-2356 |
| | | H21KU112B, 114B, H21TU107B, 108B | V-2356-204 |
| | | H21KU112A, 113A, 114A, 115A, 116A, H21TU101A, 107A, 108A | V-2356-205 |
| | | H21KU185 | V-2356-405 |
| | | H21KRU188, 191, H21TRU181, 182 | V-2356-406 |
| | | H21KU186, A, 187, A, 194, A, H21TU180A, 185A | V-2356-605 |
| | | H21KRU188, A, C, 189A, C, H21TRU181, A, 182, A, 183, A, 184A | V-2356-606 |
| | | H24KU127B, 128B | V-2357 |
| | | H24KU126A, B | V-2357-205 |

| | |
|---|---|
| MANUFACTURER | Westinghouse Electric Corp., Television & Radio Div., Metuchen, N. J. |
| TYPE SET | Television Receiver |
| TUBES | Sixteen |
| POWER SUPPLY | 105-120 Volts AC, 60 Cycles RATING 160 Watts, 1.48 Amp. @ 117 Volts AC |
| TUNING RANGE | Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier) |

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Schematic (Alternate Tuners) ..... 11 thru 18
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Tube Placement Chart (Bottom View) ..... 10
Tube Placement Chart (Top View) ..... 3

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PHOTOFACT* Folder
*TRADE MARK

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# DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 4 push-on type control knobs from the front, 3 from the side.
2. Remove 2 metal screws and the rear cover.
3. Remove the metal screw holding the antenna terminal board.
4. Remove 8 metal screws holding the upper left and two lower corner braces.
5. Remove 2 speaker leads, 2 hex nuts and the speaker.
6. Remove the "C" washer from the tuner shaft at the front of the cabinet. This washer is for shipping purposes only and may be discarded.
7. Remove 2 metal screws holding the control bracket to the cabinet.
8. Loosen the 2 hex nuts holding the clamps which secure the channel rails to the front of the cabinet.
9. Remove 7 chassis bolts from the bottom.
10. Remove the chassis.

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS

| MODEL | CHASSIS |
|---|---|
| H21T107B | V-2346-26 |

# SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. One slug for HIGH band adjustment is located at 11 o'clock, and should be adjusted first. The LOW band adjustment is located at 4 o'clock. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

For picture tube and safety glass cleaning, it is necessary to remove the chassis. (See disassembly instructions.)

SPECIAL ADJUSTMENTS

A. Focus

Adjust the Ion trap for the best focus consistent with maximum brightness.

B. Sync Control

1. Tune in the strongest station in the area.
2. Adjust the sync control, beginning at maximum clockwise position, counter clockwise to point of best sync stability.
3. Check all other receivable channels.

NOTE: If control is set too far counter clockwise the sync pulses will be clipped.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator, it is necessary to remove the rear cover and supply power to set. Set the horizontal hold at the center of its range and adjust the horiz. freq. slug (B2) until the picture synchronizes horizontally. (For location see tube placement chart.)

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate audio detector buzz, adjust the quieting control for MINIMUM buzz and maximum sound. (For location see tube placement chart.

FUSES

A 7.5Ω fusible resistor (R92) is used for LV power supply protection. (For location see tube placement chart.)

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

**WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205**

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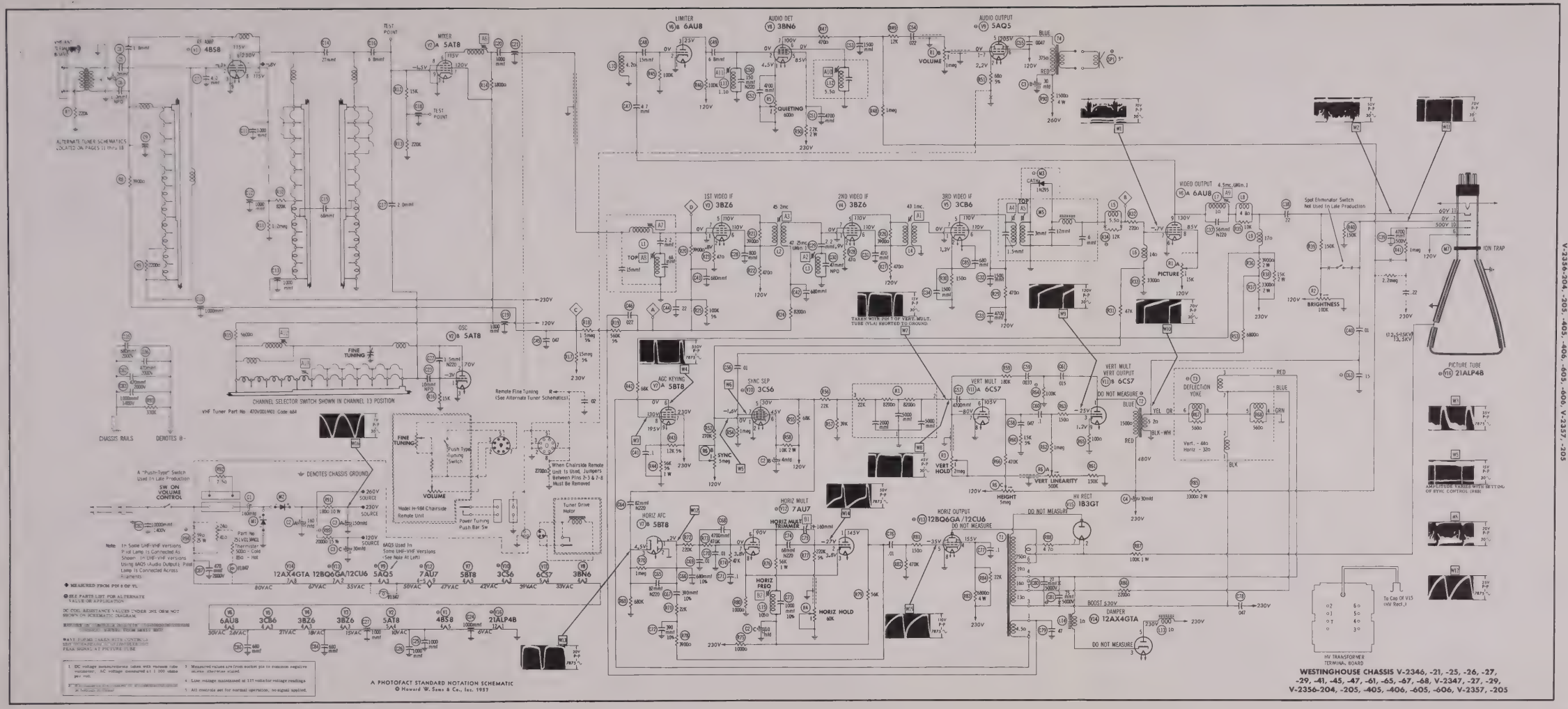
LIMITER V6-B 6AU8
AUDIO DET V8 3BN6
AUDIO OUTPUT V9 5AQ5
1ST VIDEO IF V3 3BZ6
2ND VIDEO IF V4 3BZ6
3RD VIDEO IF V5 3CB6
VIDEO OUTPUT V6-A 6AU8
RF AMP V1 4BS8
MIXER V2-A 5AT8
OSC V2-B 5AT8
AGC KEYING V7-A 5BT8
SYNC SEP V10 3CS6
VERT MULT V11-A 6CS7
VERT MULT V11-B 6CS7
HORIZ AFC V7-B 5BT8
HORIZ MULT V12 7AU7
HORIZ OUTPUT V13 12BQ6GA/12CU6
HV RECT V15 1B3GT
DAMPER 12AX4GTA
PICTURE TUBE V16 21ALP4B
ION TRAP
VOLUME
PICTURE
BRIGHTNESS
HEIGHT
VERT HOLD
VERT LINEARITY
HORIZ HOLD
SYNC
QUIETING
FINE TUNING
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
CHASSIS RAILS
DENOTES B-
DENOTES CHASSIS GROUND
SW ON VOLUME CONTROL
VOLUME
Push Type Tuning Switch
Power Tuning Push Bar Sw
Tuner Drive Motor
Model H-984 Chairside Remote Unit
Remote Fine Tuning (See Alternate Tuner Schematics)
When Chairside Remote Unit Is Used, Jumpers Between Pins 2-3 & 7-8 Must Be Removed
A "Push-Type" Switch Used In Late Production
Spot Eliminator Switch Not Used In Late Production
ALTERNATE TUNER SCHEMATICS LOCATED ON PAGES 11 thru 18
TEST POINT
DEFLECTION YOKE
DO NOT MEASURE
TAKEN WITH PIN 7 OF VERT. MULT. TUBE (V11A) SHORTED TO GROUND.
AMPLITUDE VARIES WITH SETTING OF SYNC CONTROL (NBE)
HV TRANSFORMER TERMINAL BOARD
To Cap Of V15 HV Rect.
12AX4GTA 12BQ6GA/12CU6 5AQ5 7AU7 5BT8 3CS6 6CS7 3BN6
6AU8 3CB6 3BZ6 3BZ6 5AT8 4BS8 21ALP4B
80VAC 82VAC 35VAC 50VAC 47VAC 42VAC 39VAC 33VAC
30VAC 24VAC 21VAC 18VAC 15VAC 10VAC 6VAC
Part No 21LV01XM21 Thermister 500Ω - Cold 80Ω - Hot
Note: In Some UHF-VHF Versions Pilot Lamp Is Connected As Shown. In UHF-VHF Versions Using 6AQ5 Audio Output, Pilot Lamp Is Connected Across Filaments
6AQ5 Used In Some UHF-VHF Versions - See Note At Left
VHF Tuner Part No 470V001M01 Code 664
1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1 000 ohms per volt.
2. Line voltage maintained at 117 volts for voltage readings.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. All controls set for normal operation, no signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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**WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205**

WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205

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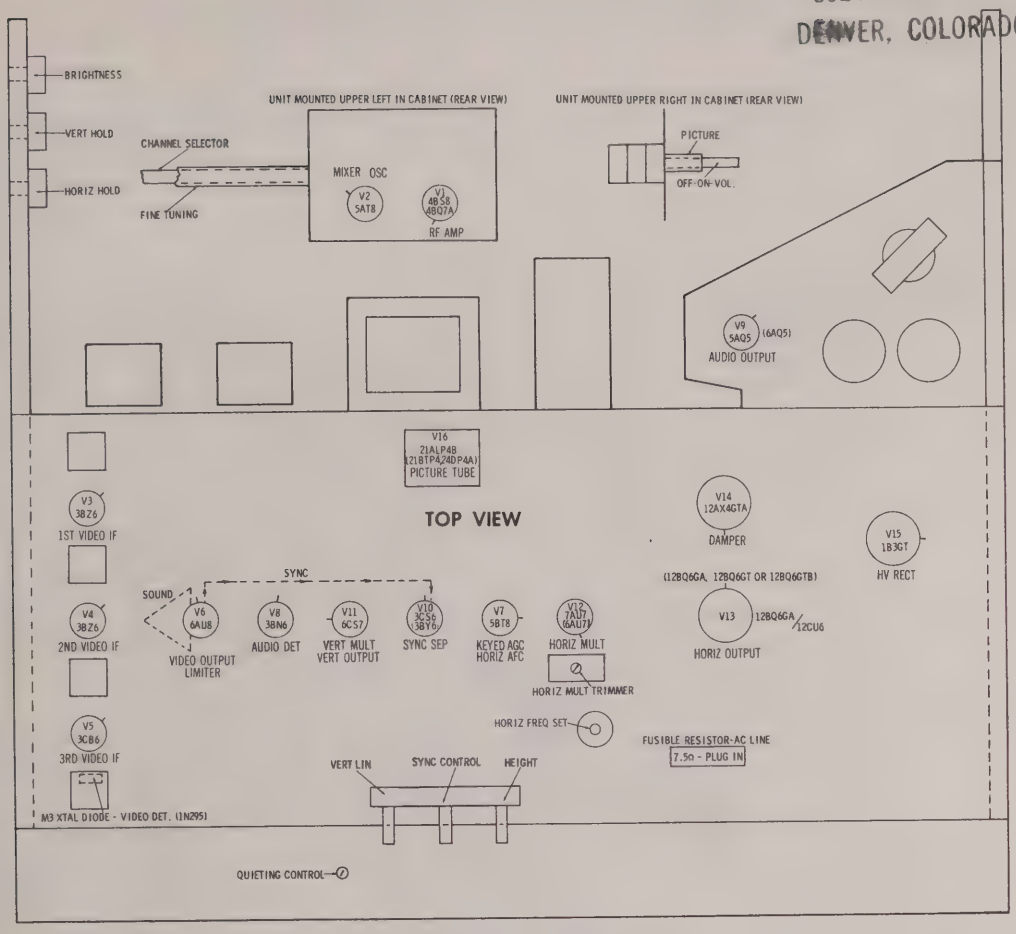
DENVER, COLORADO

# TUBE PLACEMENT CHART




# TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

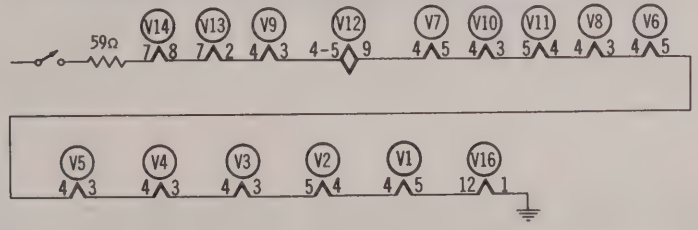
POWER SUPPLY FAILURE
No raster, no sound - **Fusible Resistor (R92), Rectifier (M1, M2)**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V3, V4, V5, Diode (M3), V6, V7**
No pic, no sound, has snow - **V1, V2, V3**
No pic, has sound, has raster - **V6, V16**
Has pic, no sound - **V6, V8, V9**
Overloaded picture - **V7**

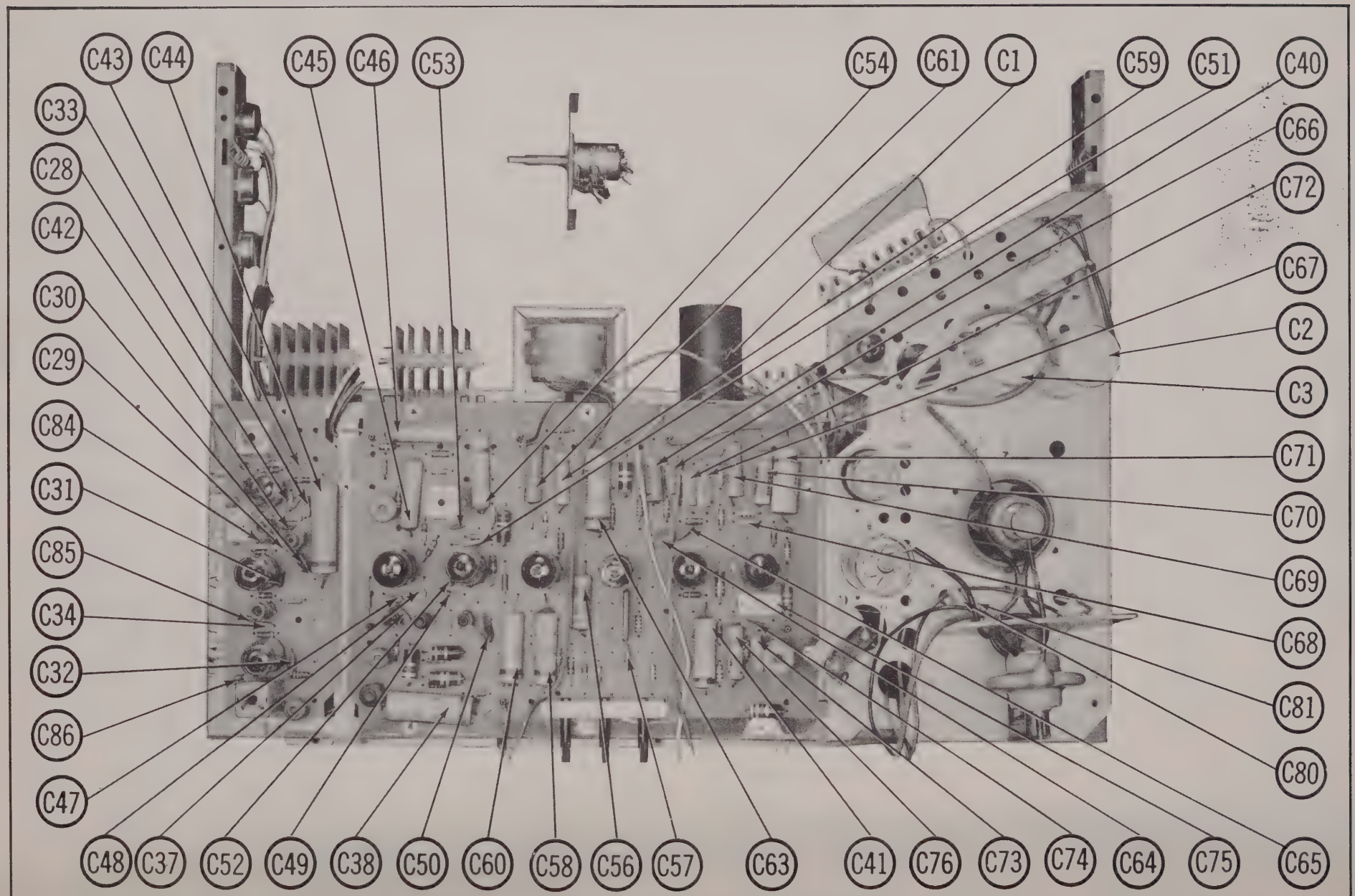
SYNC FAILURE
No vert. sync - **V10,**
No horiz. sync - **V10, V7**
No vert. or horiz. sync - **V10**

SWEEP FAILURE
No raster, has sound - **V7, V12, V13, V14, V15, V16**
No vertical deflection - **V11**
Poor vert. linearity or foldover - **V11**
Poor horiz. linearity or foldover - **V12, V13, V14**
Narrow picture - **V12, V13, V14, M1, M2**
Vert. off freq. - **V11**
Horiz. off freq. - **V7, V12**

**This receiver employs tubes used in a series filament network, an open filament in any tube in the series will cause the set to be inoperative. (See circuit below.)**




**WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205**




CHASSIS TOP VIEW - CAPACITOR IDENTIFICATION

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CHASSIS TOP VIEW - RESISTOR IDENTIFICATION

WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205

# ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

**USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.**
The high voltage lead should be securely taped and kept away from the chassis.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point Ⓐ. Positive to B-. Connect negative lead of 1.5 volt bias supply to point Ⓒ. Positive to B-.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1. | .001MFD | High side to point Ⓓ. Low side to B-. | Not used | 43.1MC | Any non-interfering channel | USE VTVM. DC probe to point Ⓑ. Common to B-. | A1 | Keep the generator output adjusted to provide a constant 1 volt output on VTVM. Adjust A1 for maximum deflection. |
| 2. | " | " | " | 47.25MC | " | " | A2 | Adjust for MINIMUM deflection. |
| 3. | " | " | " | 45.2MC | " | " | A3 | Adjust for maximum deflection. |
| 4. | " | " | 44MC (10MC Swp) | 42.25MC | " | Vert. Amp. thru 47K to point Ⓑ. Low side to B-. | A4, A5 | Use only enough sweep generator output to provide usable pattern on scope. Adjust A4 for maximum amplitude of response curve similar to Fig. 1. Adjust A5 for correct tilt. If necessary, retouch A1 thru A5 for correct position of markers as in Fig. 1. |
| 5. | Fig. 2 | Across antenna terminals thru matching network (Fig. 2). | 213MC (10MC Swp) | 211.25MC 215.75MC | 13 | " | A6, A7, A8 | Adjust A6 and A7 for maximum amplitude and correct position of 211.25MC marker (at 50%). Adjust A8 to place 215.75MC marker in trap notch. (See Fig. 3). Recheck adjustment of A7. |

4.5MC TRAP ALIGNMENT

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6. | .001MFD | High side to point Ⓑ. Low side to chassis. | 4.5MC (Unmod) | Any unused channel | DC probe thru detector (Fig. 4) to pin 11 (cathode) of picture tube. Common to B-. | A9 | Use high generator output and adjust A9 for MINIMUM deflection. |

SOUND IF ALIGNMENT USING ON THE AIR SIGNAL

1. Tune in a TV station and connect an attenuator between the antenna and receiver terminals so that the signal may be varied from strong to weak.
2. Set the quieting control (R5A) located on the back of the chassis at mid-range.
3. Apply a strong signal to the receiver and adjust A10 for maximum sound output. If peak appears at two different positions that are widely separated, use the one with the slug farthest counter clockwise. If two peaks occur within a narrow range of adjustment, sufficient signal is not being applied to the receiver and must be increased or the quieting control is not set at the desired position.
4. Adjust A11 for maximum sound output. If peaks occur at two different points of adjustment, use the one with the slug farthest counter clockwise. Reduce the signal to its lowest usable level and recheck adjustments.
5. Reduce the signal input to the receiver until noise can be heard and adjust the quieting control (R5A) for MINIMUM noise and hiss. It is imperative that the weakest available signal be used for this adjustment.
6. Do not leave the quieting control at maximum counter clockwise rotation.

SOUND IF ALIGNMENT USING TEST EQUIPMENT

Preset the quieting control (R5A) at mid-range position.
The marker generator is used in this procedure as an AM signal generator.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 7. | .01MFD | High side of sweep generator and marker generator to point Ⓑ. Low side to chassis. | 4.5MC (15KC Swp) | 4.5MC (400∿ 30% AM Mod) | Any unused channel | Across volume control. | A9, A10, A11 | Increase marker generator output until the base line is modulated with 400∿ AM. Adjust A10 for MINIMUM AM base line modulation. Reduce the AM signal and repeat adjustment of A10 until base line is flat when A10 is tuned exactly to 4.5MC. Adjust A11 for symmetrical curve similar to Fig. 5. Adjust A9 for maximum amplitude of curve. Recheck adjustment of A10. |

OSCILLATOR ALIGNMENT FOR TUNERS 470V001M01 Code 684, 470V003M01, 470V008M03, 475V001M01, 475V007M03 AND 475V007M01

1. Switch to the highest high band channel (7-13) operating in the area and set the fine tuning to mid-range position.
2. Using a non-metallic alignment tool, adjust the high band oscillator slug (A12) for best picture detail and sound quality.
3. Switch to the highest low band channel (2-6) operating in the area.
4. Adjust the low band oscillator slug (A13) for best picture detail and sound quality. Check the previously made adjustment and if the tuning has changed, repeat the above adjustments.

OSCILLATOR ALIGNMENT FOR TUNERS 470V001M01 Code 119 AND 470V005M01

1. Switch to the highest high band channel (7-13) operating in the area and set the fine tuning to the center of its range.
2. Adjust the high band oscillator slug (A14) for the best picture detail and sound quality.
3. Switch to channel 6 if it is operating in the area and adjust the channel 6 oscillator slug (A15) for best picture detail and sound quality.
4. Switch to channel 4 if operating in the area and adjust channel 4 oscillator slug (A16) for best picture detail and sound quality.
5. Switch to channel 2 if it is being used in the area and adjust Channel 2 oscillator slug (A17) for best picture detail and sound quality.

ANTENNA TRAP ALIGNMENT

The antenna trap is adjustable over the IF range of the receiver and is preset to the factory at 44MC. A18 can be adjusted to minimize any interference in this range.

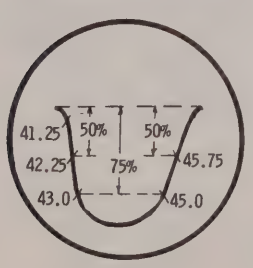
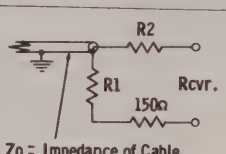


FIG. 1




| Zo | R1 | R2 |
|---|---|---|
| 50Ω | 56Ω | 120Ω |
| 75Ω | 82Ω | 110Ω |

FIG. 2

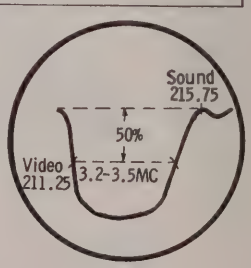


FIG. 3

# ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT FOR TUNER #470V007M01

Connect bias as under "Video IF Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the center of its range.
Use only enough sweep generator output to provide usable pattern on scope.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 8. | Two 120Ω Carbon Resistors | Across antenna terminals with 120Ω in each lead. | 213MC (10MC Swp) | 211.25MC 215.75MC | 13 | Vert. Amp. thru 47K to point (B). Low side to chassis. | A19 | Adjust to place sound marker in trap notch as in Fig. 6. Video marker should fall at 50%. |
| | | | 207MC (10MC Swp) | 205.25MC 209.75MC | 12 | | A20 | |
| | | | 201MC (10MC Swp) | 199.25MC 203.75MC | 11 | | A21 | |
| | | | 195MC (10MC Swp) | 193.25MC 197.75MC | 10 | | A22 | |
| | | | 189MC (10MC Swp) | 187.25MC 191.75MC | 9 | | A23 | |
| | | | 183MC (10MC Swp) | 181.25MC 185.75MC | 8 | | A24 | |
| | | | 177MC (10MC Swp) | 175.25MC 179.75MC | 7 | | A25 | |
| | | | 85MC (10MC Swp) | 83.25MC 87.75MC | 6 | | A26 | |
| | | | 79MC (10MC Swp) | 77.25MC 81.75MC | 5 | | A27 | |
| | | | 69MC (10MC Swp) | 67.25MC 71.75MC | 4 | | A28 | |
| | | | 63MC (10MC Swp) | 61.25MC 65.75MC | 3 | | A29 | |
| | | | 57MC (10MC Swp) | 55.25MC 59.75MC | 2 | | A30 | |

RF AND MIXER ALIGNMENT FOR TUNER #470V007M01

Connect bias as under "Video IF Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 9. | Two 120Ω Carbon Resistors | Across antenna terminals with 120Ω in each lead. | 207MC (10MC Swp) | 205.25MC 209.75MC | 12 | Vert. Amp. thru 10K to point (E). Low side to chassis. | A31, A32, A33 | Adjust for response curve similar to Fig. 7 with markers above 90%. |
| 10. | " | " | 213MC (10MC Swp) | 211.25MC 215.75MC | 13 | " | | Check for response similar to Fig. 7. If markers fall below 70% on any channel make compromise adjustments of A31, A32 and A33 with channel switch set to that channel. Check all other channels to see that they have not been seriously affected. |
| | | | 201MC (10MC Swp) | 199.25MC 203.75MC | 11 | | | |
| | | | 195MC (10MC Swp) | 193.25MC 197.75MC | 10 | | | |
| | | | 189MC (10MC Swp) | 187.25MC 181.75MC | 9 | | | |
| | | | 183MC (10MC Swp) | 181.25MC 185.75MC | 8 | | | |
| | | | 177MC (10MC Swp) | 175.25MC 179.75MC | 7 | | | |
| | | | 85MC (10MC Swp) | 83.25MC 87.75MC | 6 | | | |
| | | | 79MC (10MC Swp) | 77.25MC 81.75MC | 5 | | | |
| | | | 69MC (10MC Swp) | 67.25MC 71.75MC | 4 | | | |
| | | | 63MC (10MC Swp) | 61.25MC 65.75MC | 3 | | | |
| | | | 57MC (10MC Swp) | 55.25MC 59.75MC | 2 | | | |

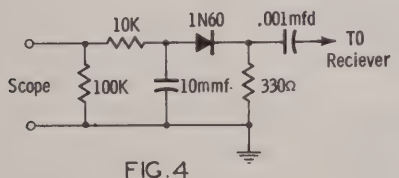


FIG.4

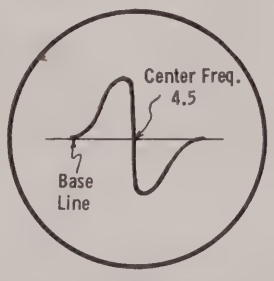


FIG.5

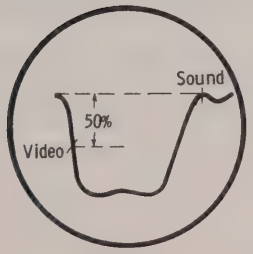


FIG.6

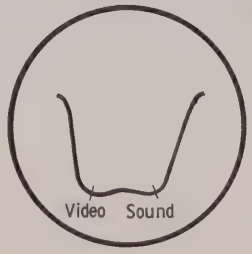
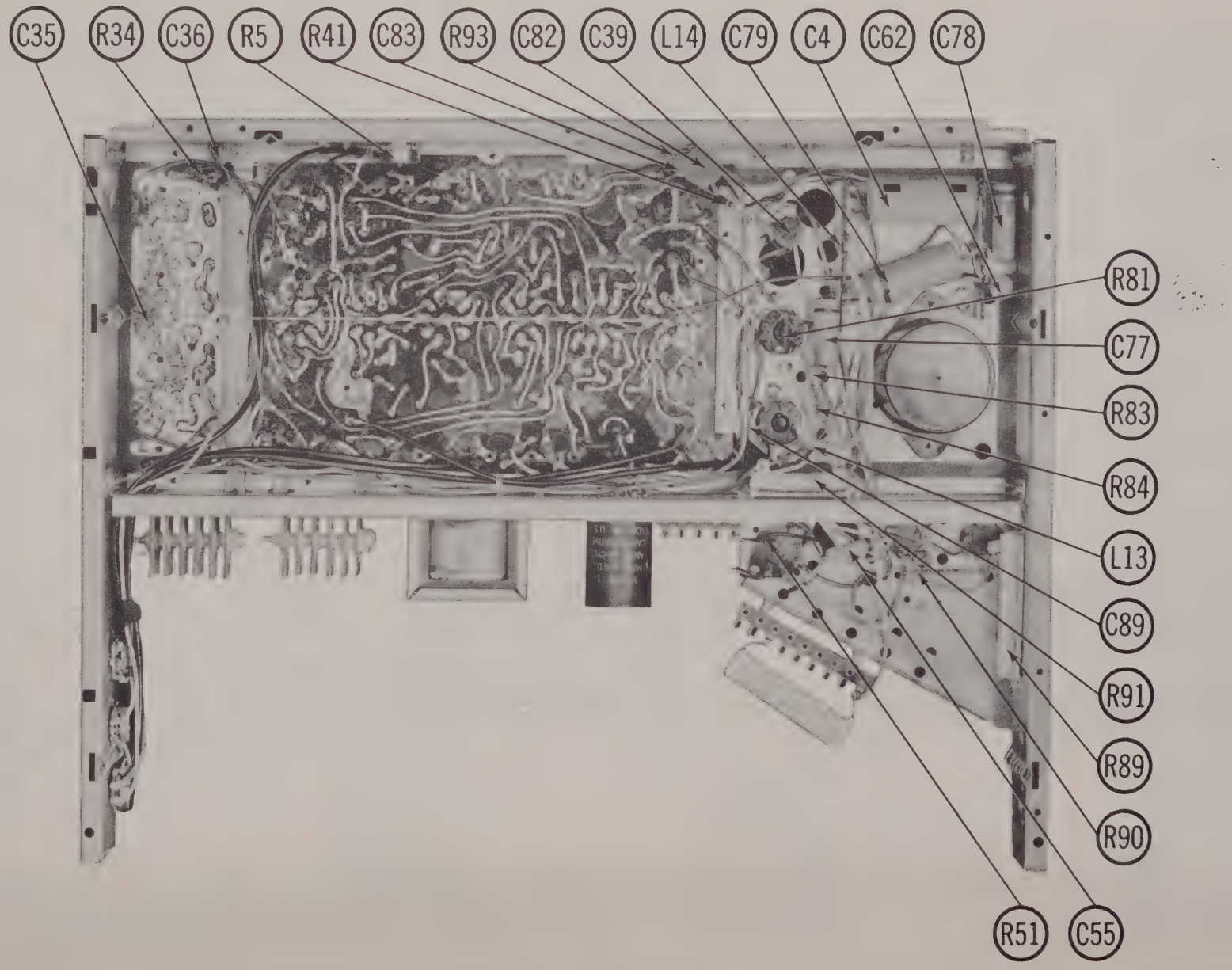


FIG. 7




**CHASSIS BOTTOM VIEW**

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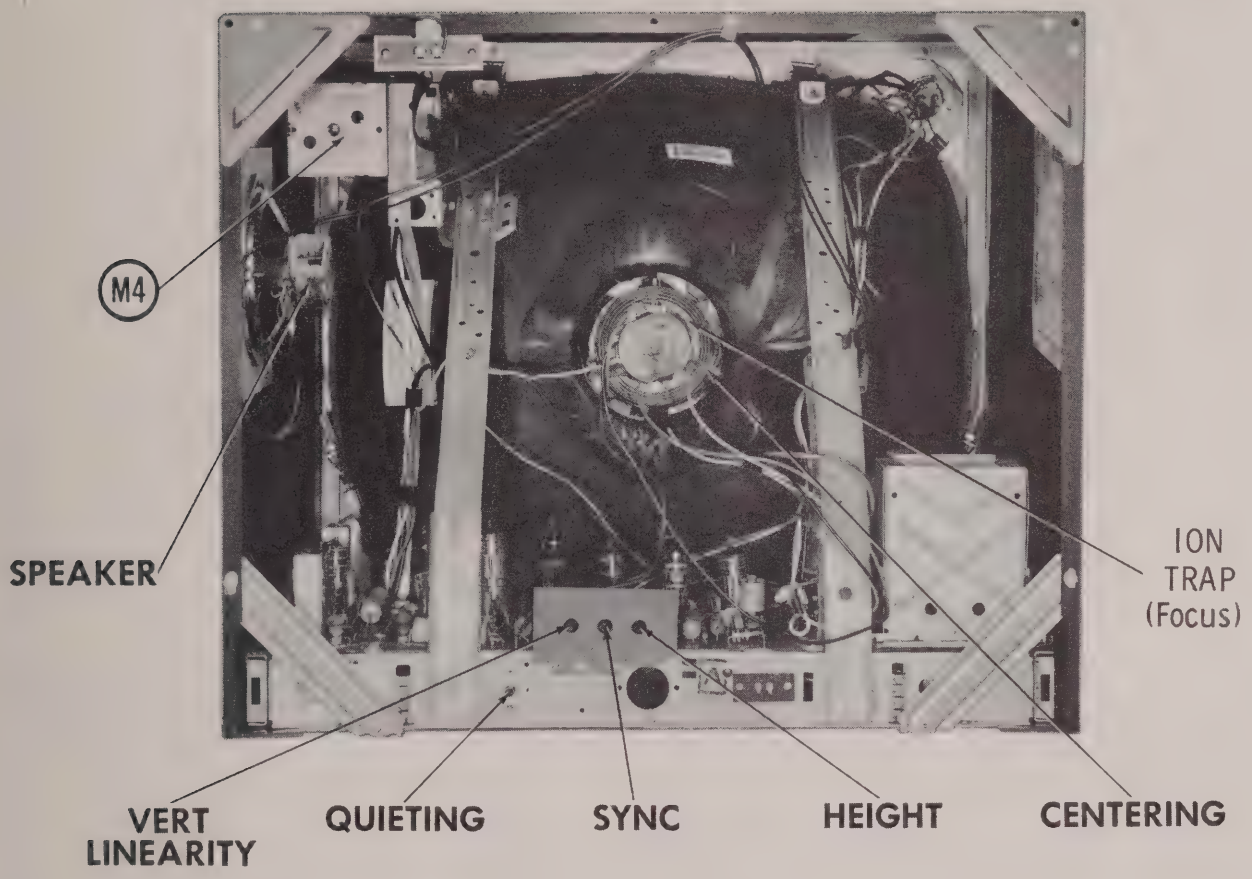



## CABINET—REAR VIEW

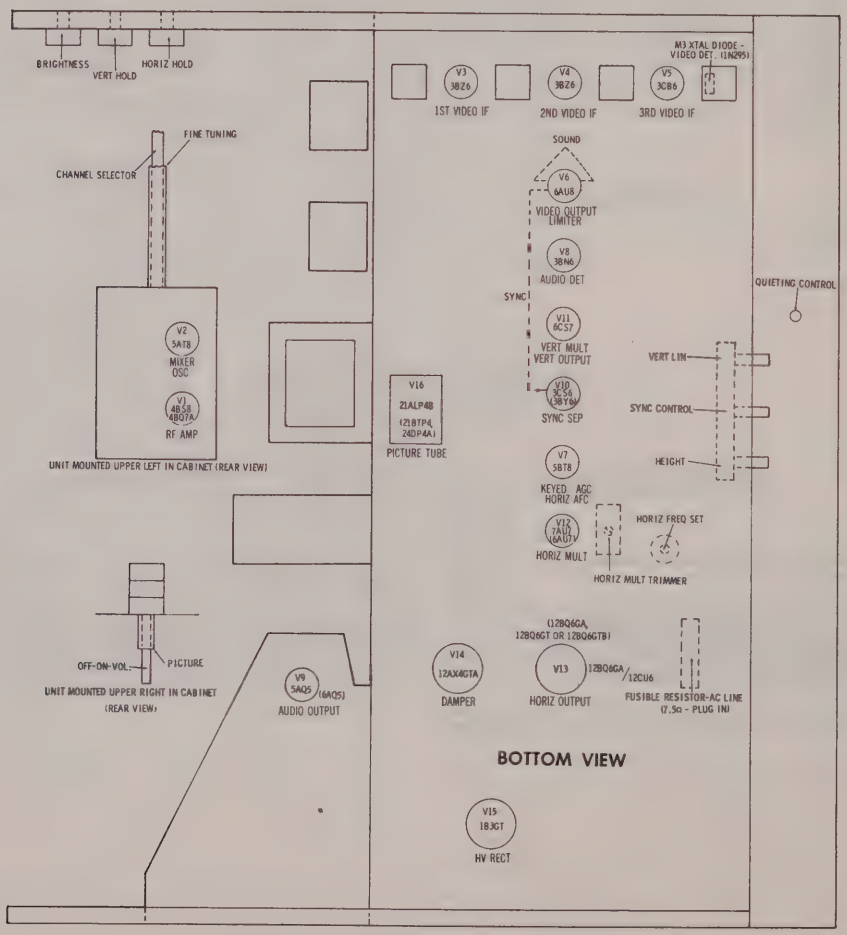
## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Connect a short clip lead across the horizontal frequency coil (L15). This can be done on top of the chassis.
2. Set the horizontal hold control (R4) to the middle of its range and leave it in this position through the following steps.
3. Connect the DC probe of the VTVM to pin 7 (grid) of the horizontal multi-vibrator (V12) and the common lead to B-.
4. With the receiver tuned to a TV station, adjust the horizontal mult. trimmer (B1) for zero reading on the VTVM. If zero can be approached but not quite reached on the extreme of B1, it may be necessary to set the horizontal hold control SLIGHTLY to one side of mid-range to obtain zero reading on the VTVM.
5. Remove the clip lead from across L15.
6. Adjust the frequency coil slug (B2) for zero reading on the meter and check the adjustment by switching off channel and back again. The receiver should pull into horizontal synchronization on all channels. If not, repeat adjustments.

# RESISTANCE MEASUREMENTS

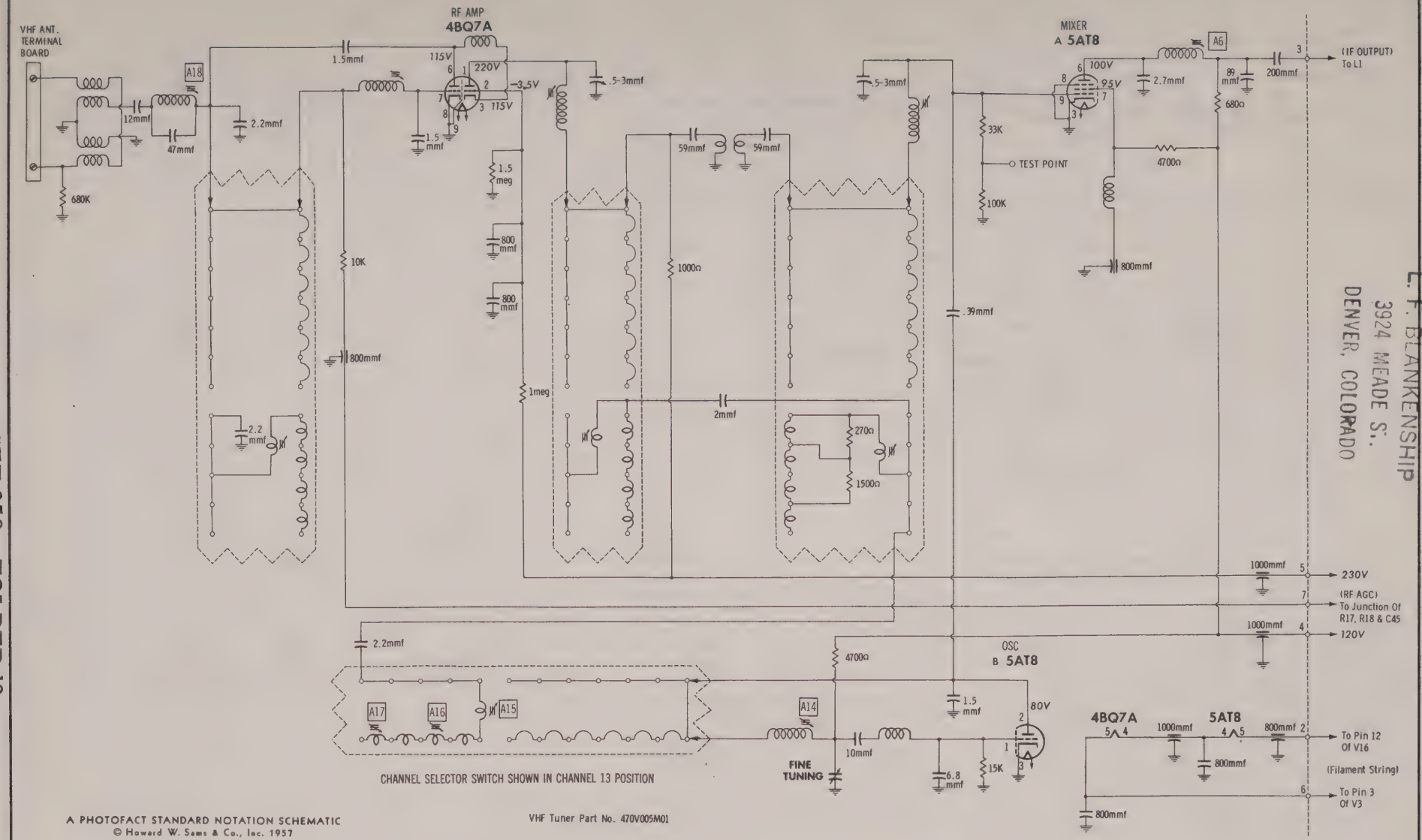
| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V1 | 4BS8 | INF | 2Meg | 0Ω | 2.5Ω | 1.5Ω | †180Ω | 450K | INF | 0Ω |
| V2 | 5AT8 | 15K | †7300Ω | 0Ω | 2.5Ω | 3.5Ω | †3900Ω | †2000Ω | 0Ω | 235K |
| V3 | 3BZ6 | 100K | 47Ω | 3.5Ω | 4.2Ω | †2470Ω | †2470Ω | 0Ω | | |
| V4 | 3BZ6 | 100K | 47Ω | 4.2Ω | 5Ω | †2470Ω | †2470Ω | 0Ω | | |
| V5 | 3CB6 | .1Ω | 150Ω | 5Ω | 6Ω | †2470Ω | †2470Ω | 0Ω | | |
| V6 | 6AU8 | 0Ω | 100K | †100K | 7Ω | 6Ω | 0Ω | 3300Ω | †9000Ω | †5000Ω |
| V7 | 5BT8 | 1.7Meg | 0Ω | 680K | 11Ω | 10Ω | 650K | †180Ω | †70K | 56K |
| V8 | 3BN6 | ● 500Ω | 1.1Ω | †7Ω | 8Ω | †22K | 5.5Ω | ‡1Meg | | |
| V9 | 5AQ5 | 1Meg | 68Ω | 12.5Ω | 13.5Ω | †1900Ω | †2000Ω | 1Meg | | |
| V10 | 3CS6 | 50K | 0Ω | 9.5Ω | 10Ω | †35K | †12K | 1Meg | | |
| V11 | 6CS7 | ‡4800Ω | NC | ●1.4Meg | 8Ω | 9.5Ω | ●‡1.5Meg | ● 1.5Meg | 0Ω | 100Ω |
| V12 | 7AU7 | †56K | ● 230K | 1000Ω | 12.5Ω | 12.5Ω | †56K | 2.4Meg | 1000Ω | 11Ω |
| V13 | 12BQ6GA | TP | 13.5Ω | NC | †5000Ω | 470K | NC | 16Ω | 0Ω | TOP CAP ‡20Ω |
| V14 | 12AX4GTA | NC | NC | 350K | NC | †180Ω | NC | 18Ω | 16Ω | |
| V15 | 1B3GT | | PINS | 1 THRU 8 | HAVE | INFINITE | RESISTANCE | | | TOP CAP ‡770Ω |
| V16 | 21ALP4B | 0Ω | 150K | Pin 6 †2000Ω | Pin 10 ‡1Meg | Pin 11 ●160K | Pin 12 1.5Ω | | | |

† MEASURED FROM OUTPUT OF M1.
‡ MEASURED FROM PIN 3 OF V14.
● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
NC NO CONNECTION
TP TIE POINT




# TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO




CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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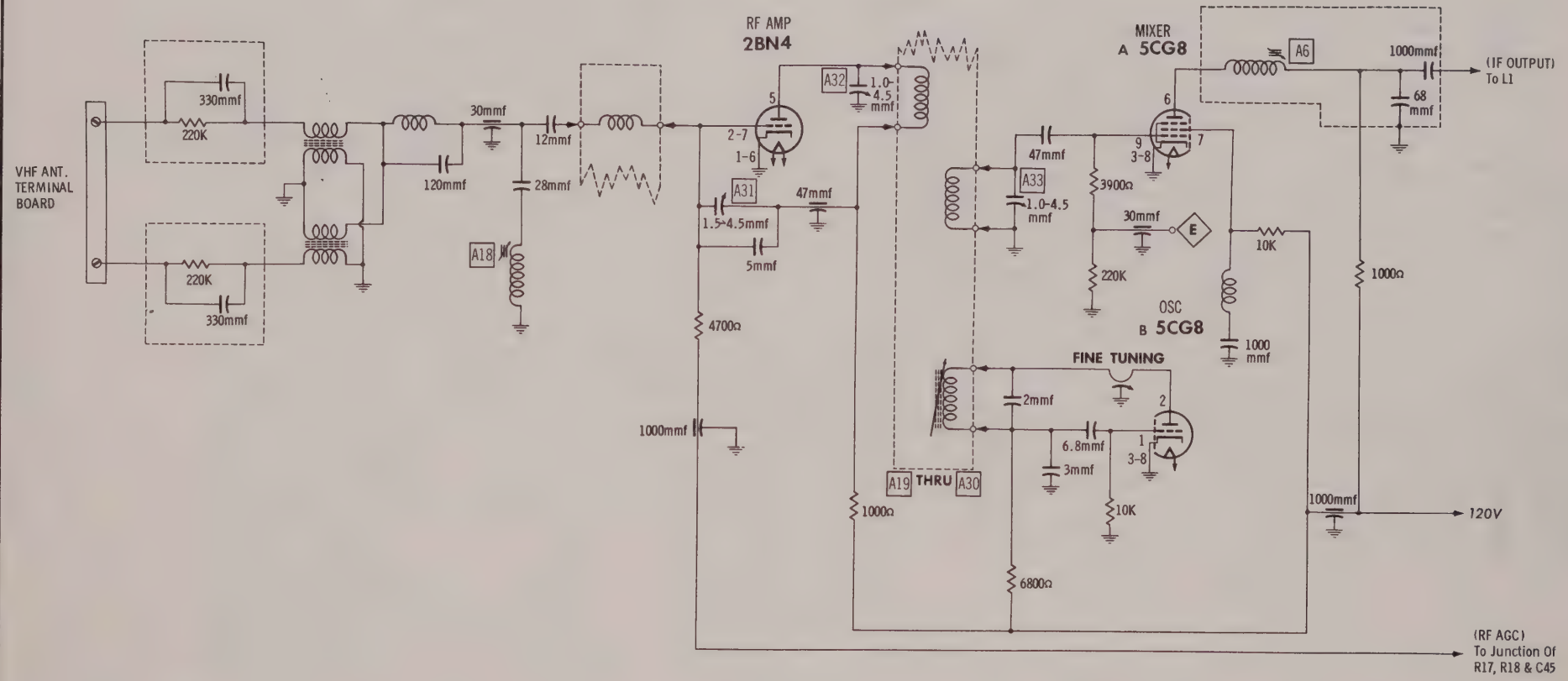
VHF Tuner Part No. 470V005M01

# ALTERNATE VHF TUNER SCHEMATIC

WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205




A PHOTOFACT STANDARD NOTATION SCHEMATIC

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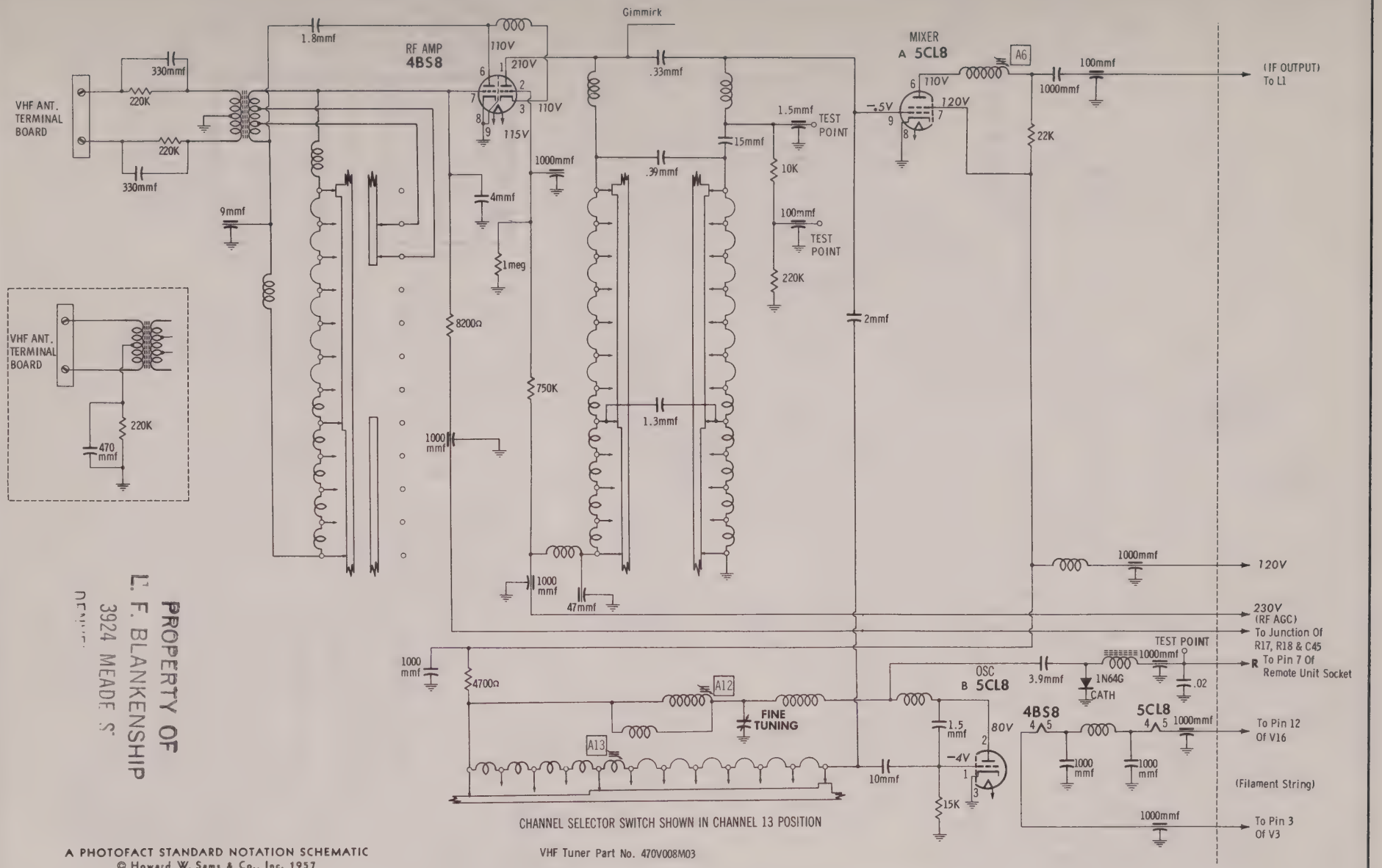
VHF Tuner Part No. 470V007M01

# ALTERNATE VHF TUNER SCHEMATIC




PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST

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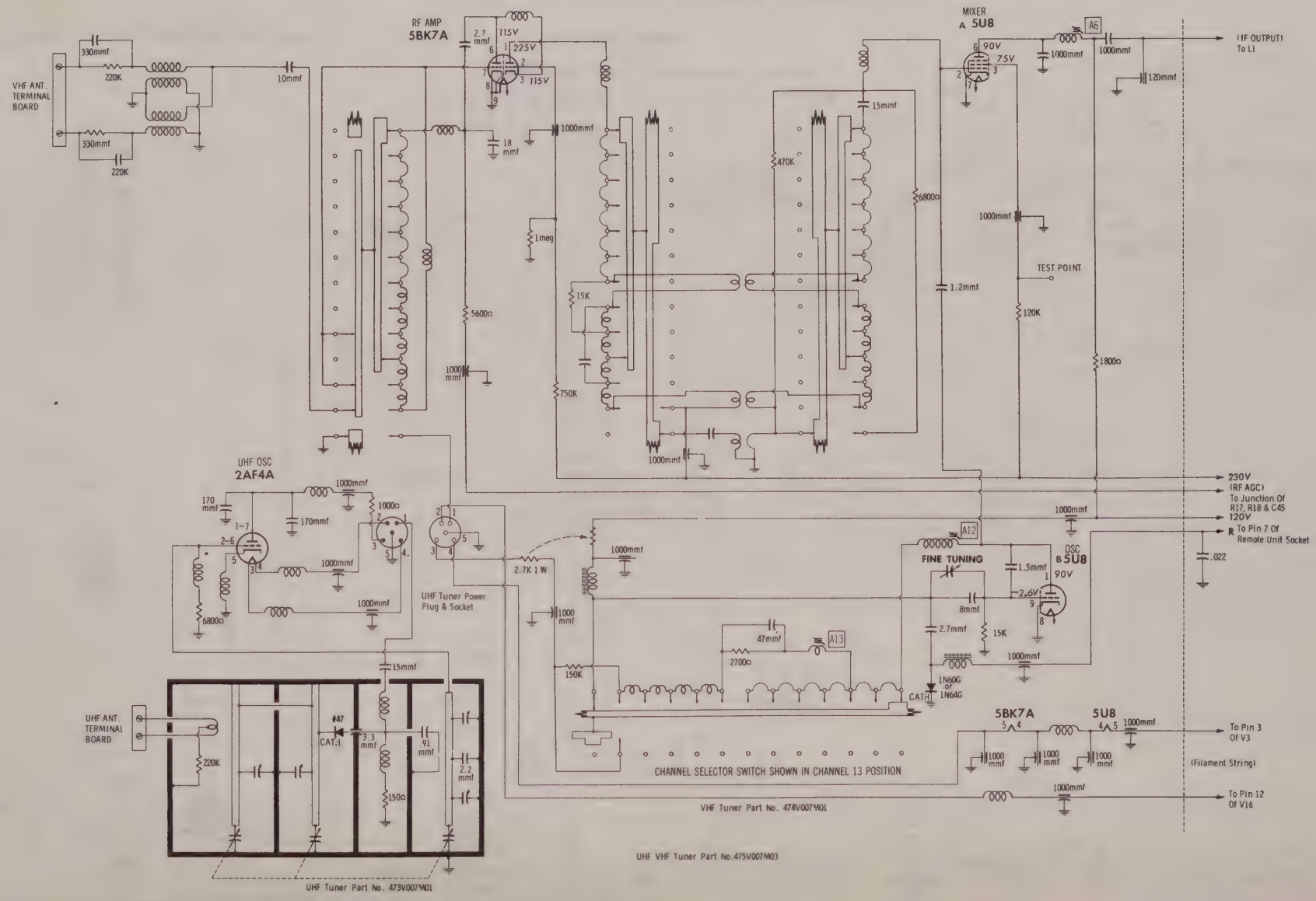
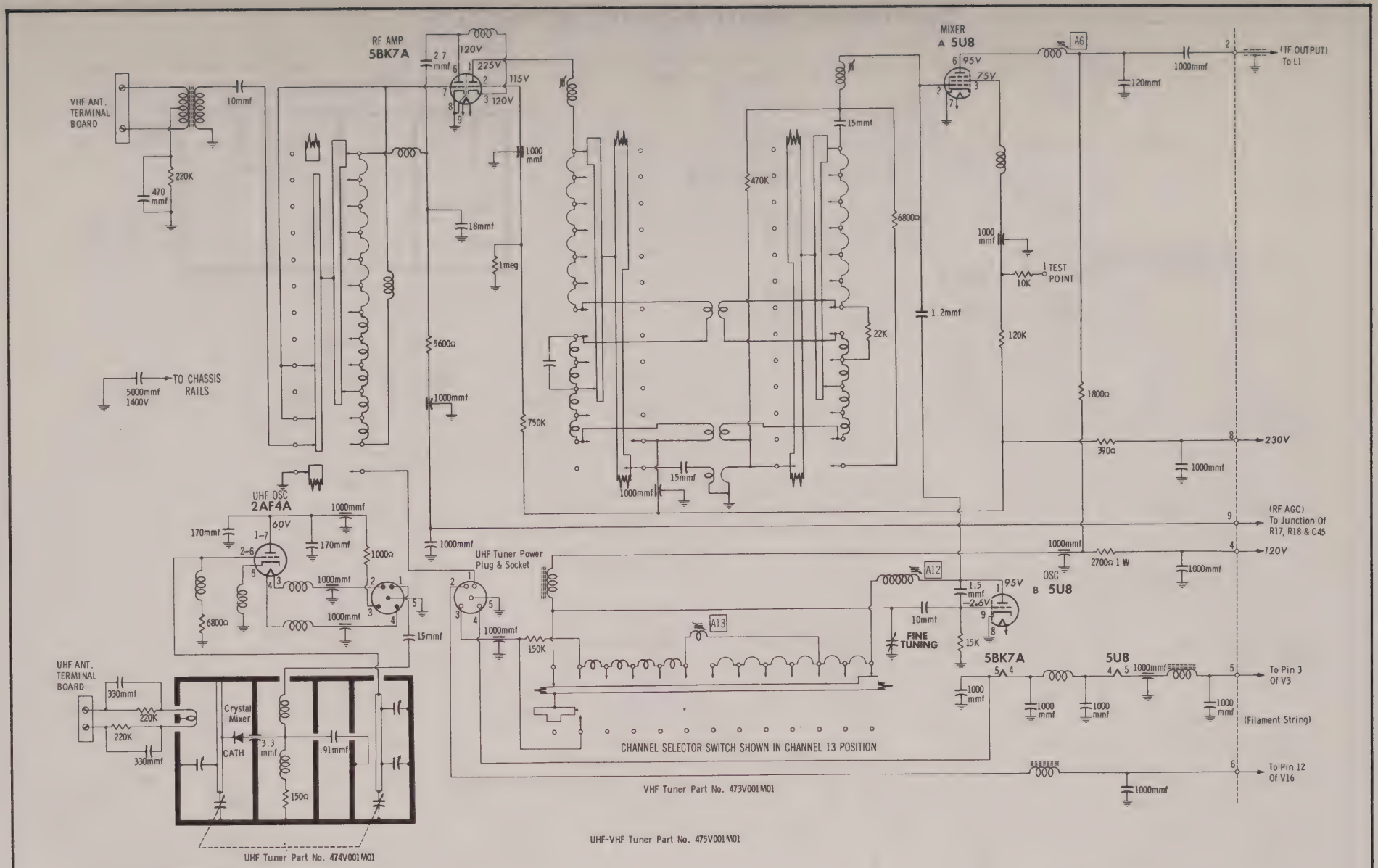
# ALTERNATE VHF TUNER SCHEMATIC

WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205




# ALTERNATE UHF-VHF TUNER SCHEMATIC

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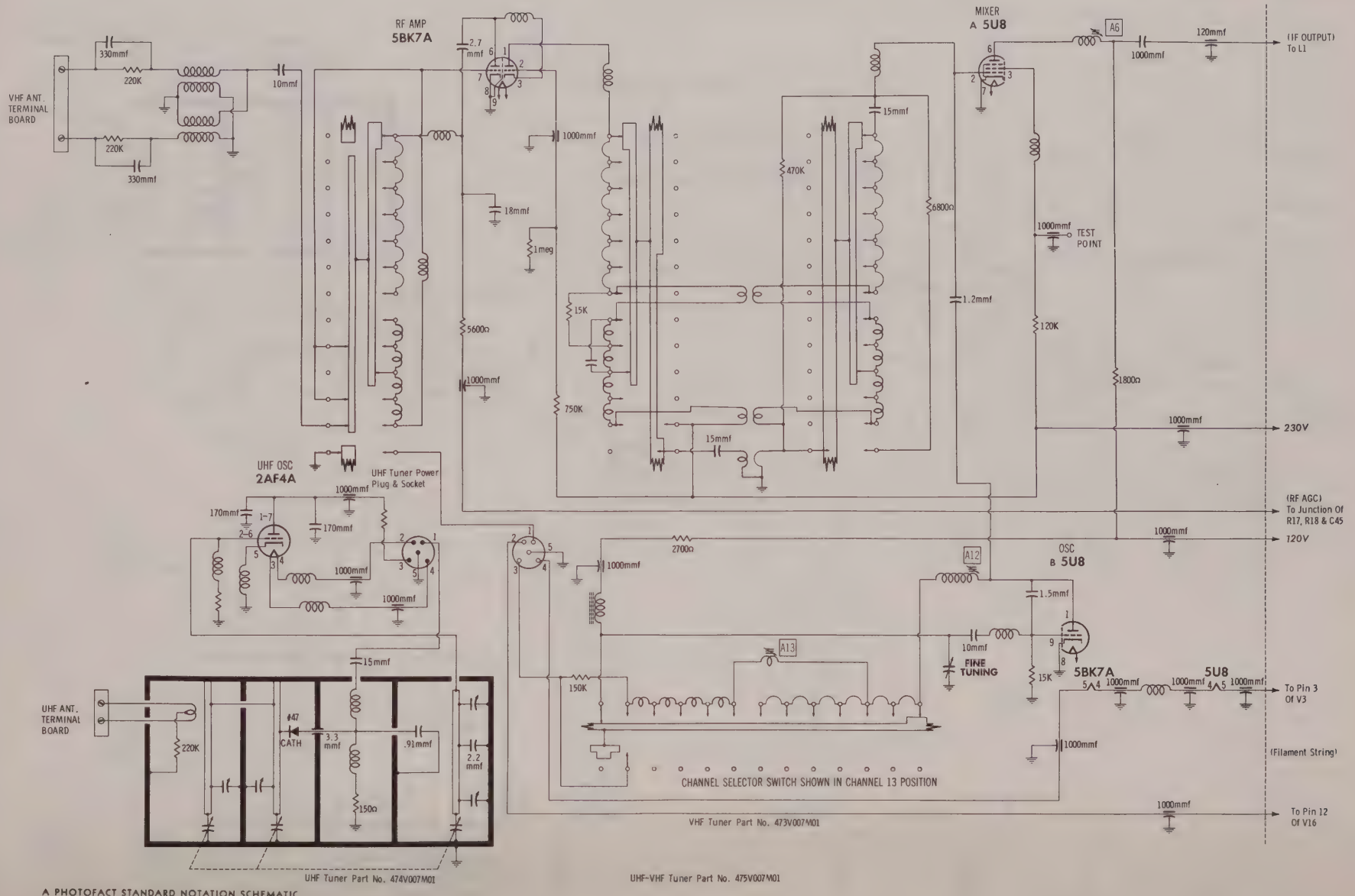
# ALTERNATE UHF-VHF TUNER SCHEMATIC

WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205




A PHOTOFACT STANDARD NOTATION SCHEMATIC

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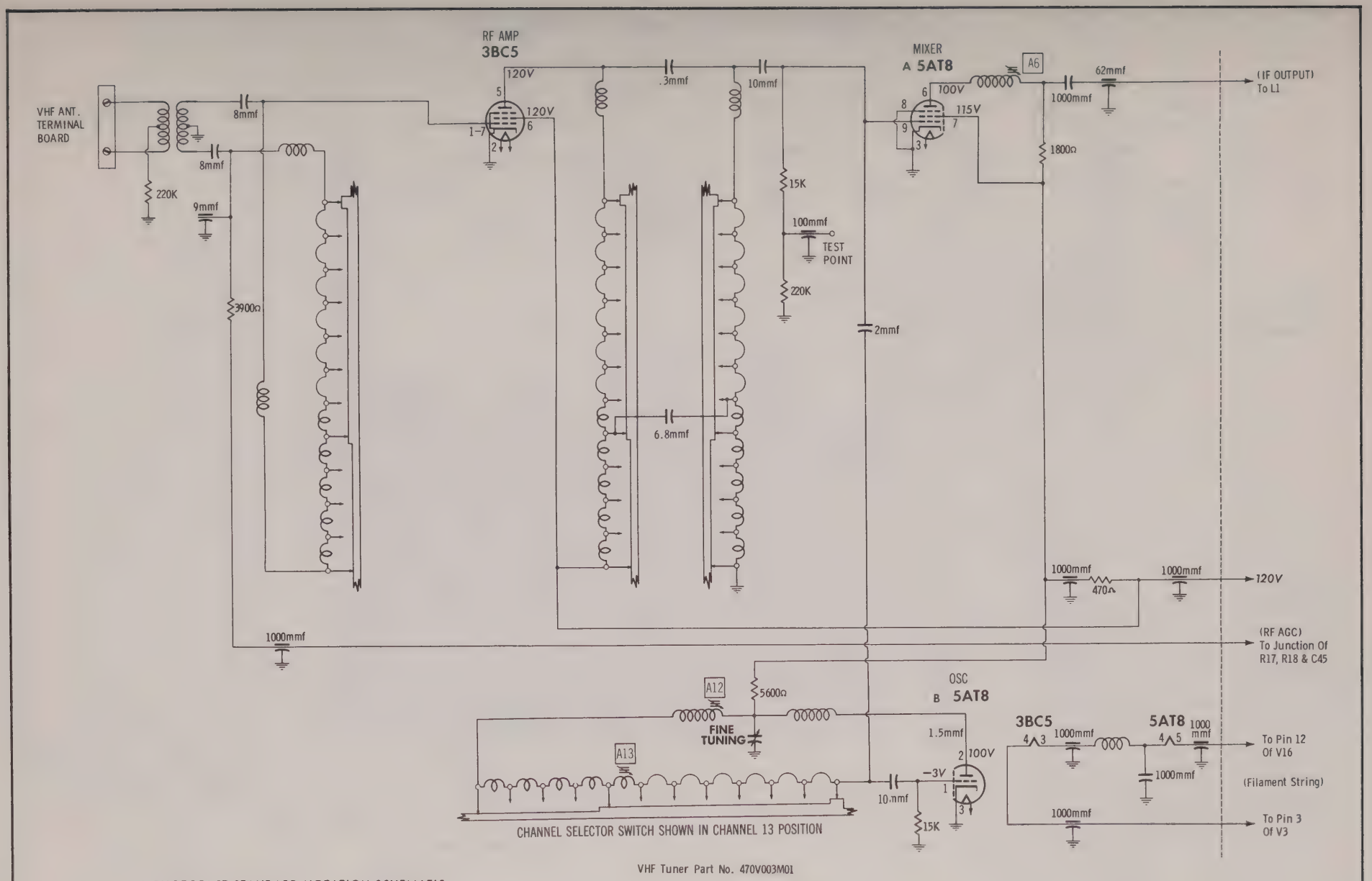
# ALTERNATE UHF-VHF TUNER SCHEMATIC




VHF Tuner Part No. 470V003M01

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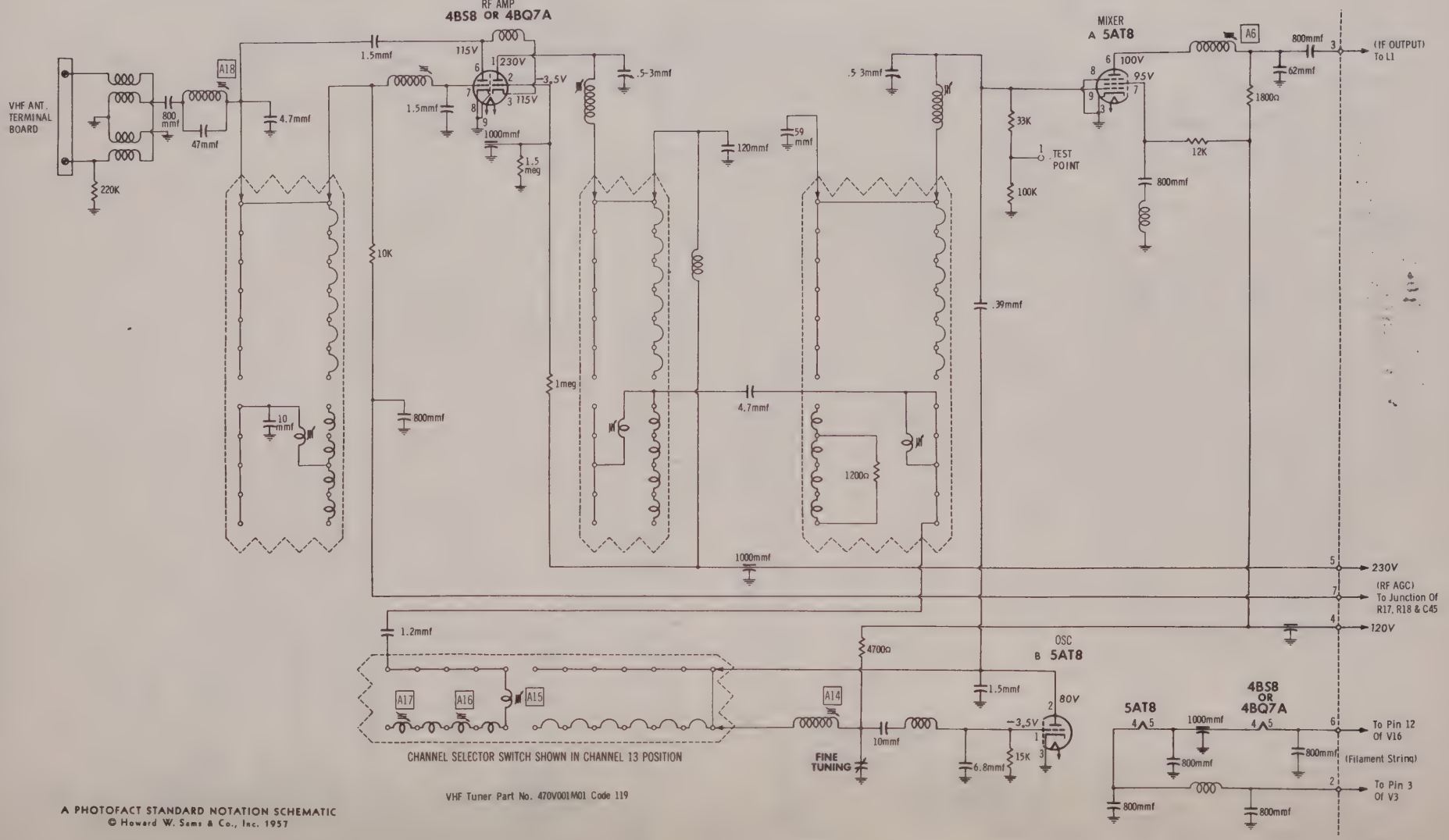
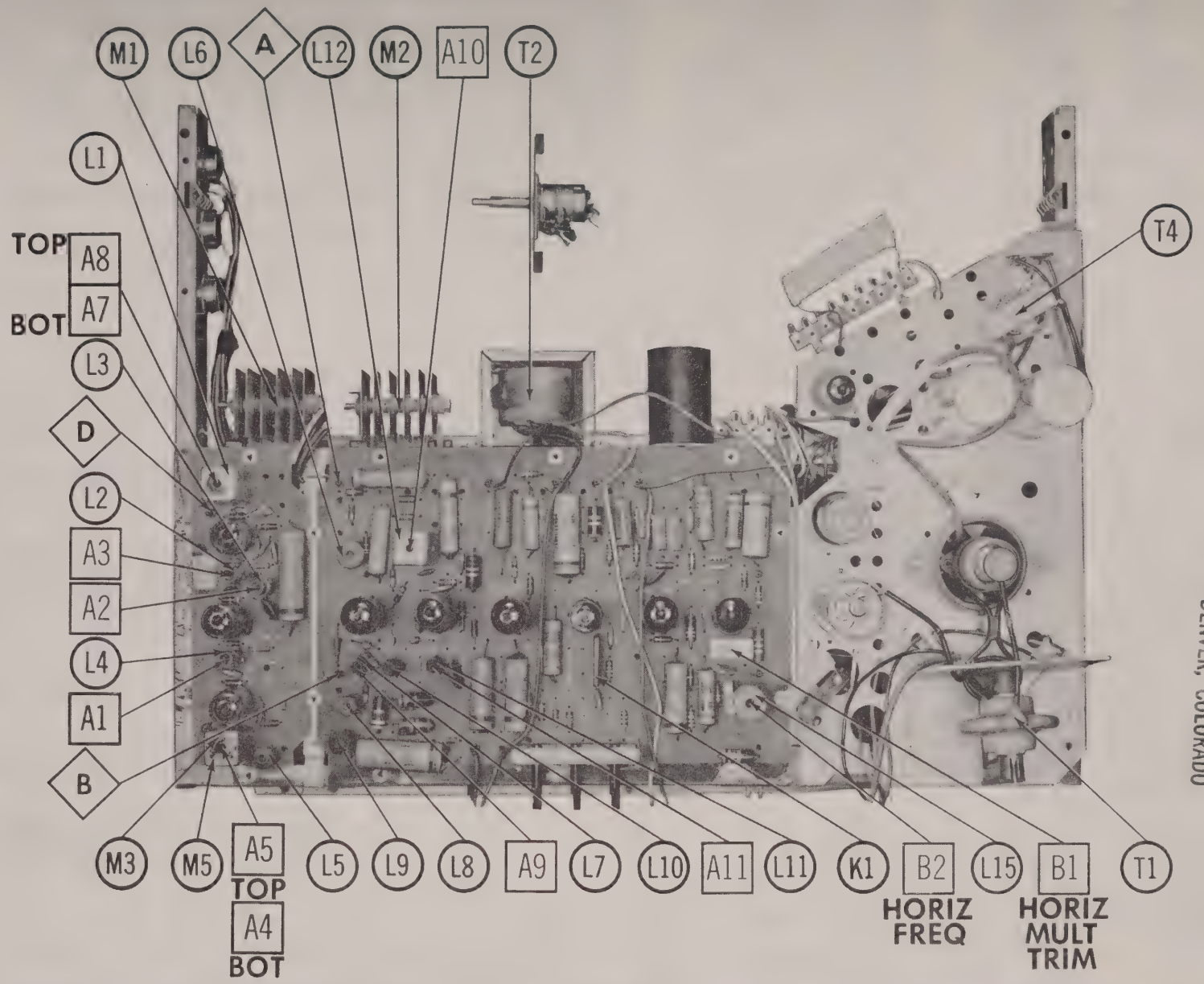
# ALTERNATE VHF TUNER SCHEMATIC

WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27, -29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29, V-2356-204, -205, -405, -406, -605, -606, V-2357, -205




# ALTERNATE VHF TUNER SCHEMATIC




CHASSIS TOP VIEW - TRANS. INDUCTOR & ALIGNMENT IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE, S.
DENVER, COLORADO

WESTINGHOUSE CHASSIS V-2346, -21, -25, -26, -27,
-29, -41, -45, -47, -61, -65, -67, -68, V-2347, -27, -29,
V-2356-204, -205, -405, -406, -605, -606, V-2357, -205

# PARTS LIST AND DESCRIPTIONS

## TUBES (GENERAL ELECTRIC, SYLVANIA)

| ITEM No. | USE | TYPE | NOTES |
|---|---|---|---|
| V1 | RF Amp. | 6BC8 | Note 1 |
| V2 | Mixer-Osc. | 5AT8 | |
| V3 | 1st Video IF Amp. | 2BZ6 | |
| V4 | 2nd Video IF Amp. | 2BZ6 | |
| V5 | 3rd Video IF Amp. | 3CB6 | |
| V6 | Video Output-Limiter | 6AU8 | Note 5 |
| V7 | AGC Keying-Horiz. AFC | 5BT3 | |
| V8 | Audio Det. | 2BN6 | |
| V9 | Audio Output | 5AQ5 | Note 2 |
| V10 | Sync Sep. | 3C9S | Note 3 |
| V11 | Vert. Mult.-Vert. Output | 6CS7 | |
| V12 | Horiz. Mult. | 7AL7 | Note 4 |
| V13 | Horiz. Output | 12BQ6GA, 12BQ6GTB, 12CU5 | Note 5 |
| V14 | Damper | 12AX4GTA | |
| V15 | HV Rectifier | 1B3GT | |

Blank - Some versions may use 4BQ7A in this application.
Note 2: Some versions may use 6AQ5 in this application.
Note 3: Some versions may use 3BT6 in this application.
Note 4: Some versions may use 6AU7, 6AU7A in this application.
Note 5: Some versions may use 12BQ6GTA, 12BQ6GTB in this application.

## PICTURE TUBE

| ITEM No. | REPLACEMENT DATA: Westinghouse PART No. | CBS PART No. | GENERAL ELECTRIC PART No. | SYLVANIA PART No. | NOTES |
|---|---|---|---|---|---|
| V16 | 21ALP4B | 21ALP4<br>21ALP4A<br>21ALP4B<br>21ALP4C<br>21ALP4A1<br>21ALP4A2<br>21ALP4A3<br>21BTP4<br>24DP4A | 21ALP4A<br>21ALP4B<br>21ALP4<br>21BTP4<br>24DP4<br>24DP4A<br>24DP4 | 21ALP4A,<br>21ALP4B<br>21ALP4<br>21ALP4A1<br>21ALP4A2<br>21BTP4<br>24DP4<br>24DP4A<br>24DP4 | 1 Silver Screen "ES"<br>2 Aluminized |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING: CAP | VOLT | REPLACEMENT DATA: Westinghouse PART No. | ALLOXOVX PART No. | CORNELL DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
|---|---|---|---|---|---|---|---|---|---|
| C1 | 180 | 300 | V15329 | AFH51 37-25 | XA02E6 | FJH31 | TMG-24 | S-160 | TVL-473 |
| C1A | 40 | 300 | 21EV007M01 | AFH54 56-36 | | FJH32, 35 | RMD-30<br>TD-4-450 | | TVL-4605.5 |
| B | 45 | 300 | | | | | | | |
| C | 40 | 300 | | | | | | | |
| C2A | 250 | 50 | 21EV008M01 | AFH4-46-25 | | FJH33, 37 | TMD-30<br>TD-150-300 | 8-300<br>*MD-4530 | TVL-4574 |
| B | 30 | 300 | | | | | | | |
| C | 20 | 300 | | | | | | | |
| C4 | 20 | 450 | 21EV009M01 | PRS450V30 | BR304S | TC77 | TD-30-450 | FM-4530 | TVA 1711 |

## FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

| ITEM No. | RATING: CAP | VOLT | REPLACEMENT DATA: Westinghouse PART No. | ALLOXOVX PART No. | CENTRALAB PART No. | CORNELL DUBILIER PART No. | ERIE PART No. | MALLORY PART No. | SPRAGUE PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| C5 | 1.0 | | | NPO-SI 1.0 | TCZ-1 | | TCO-1 | | 5TCCB-V1 | NPO |
| C6 | 1.0 | | | NPO-SI 1.0 | TCZ-1 | C10V4C | TCO-1 | | 5TCCB-V1 | NPO |
| C7 | 4.0 | | | | | | | | | |
| C8 | 1.8 | | | NPO-SI 1.8 | TCZ-1R5 | C10V18C | TCO-1.8 | ET-5515 | 5TCCB-V1R | |
| C9 | | | | | | | | | | |
| C10 | 1000 | | | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C11 | 1000 | | | BPD-001 | DD-103 | BYARDI | ED-1000 | DC531 | 5HK-DA | |
| C12 | 1000 | | | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C13 | 1000 | | | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C14 | .27 | | | | | | TCO- .68 | | 5TCCB-V68 | |
| C15 | .68 | | | NPO-SI 6.8 | TCZ-6R8 | C10V68C | TCO-.68 | ET-5568 | 5TCCB-V68 | |
| C16 | 2.0 | | | NPO-SI 2.2 | TCZ-2R2 | C10V2C | TCO-2.2 | ET-5568 | 5TCCB-V22 | |
| C17 | 2.0 | | | | | | | | | |
| C18 | | | | | | | | | | |
| C19 | 1000 | | | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C20 | 1000 | | | BPD-001 | DD-103 | BYARDI | ED-1000 | DC531 | 5HK-DA | |
| C21 | | | | | | | | | | |
| C23 | 1.5 | | | | | | | | | |
| C23 | 10 | | | NPO-SI 10 | TCZ-10 | C30Q1C | TCO-10 | ET-541 | 5TCC-Q1 | NP0 |
| C24 | 1000 | | | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C25 | 1000 | | | BPD-001 | DD-103 | BYARDI | ED-1000 | DC531 | 5HK-DA | |
| C26 | 1000 | | | BPD-001 | DD-103 | BYARDI | ED-1000 | DC531 | 5HK-DA | |
| C27 | 1000 | | | EF-001 | MFT-1000 | | | | 503C-D1 | |
| C28 | 8.0 | | 21EV300M18 | BPD-0008 | L10T4 | SD-800 | | | 5GA-T8 | |
| C29 | 2.2 | | 21TV012A39 | NPO-SI 2.2 | TCZ-2R2 | C30Y2C | TCO-2.2 | | 5TCCB-V22 | |
| C30 | 47 | | 21EV300M05 | NPO-SI 47 | TCZ-47 | C30Q47C | TCO-47 | ET-5447 | 5TCC-Q47 | NP0 |
| C31 | 470 | | 21EV300M07 | BPD-00047 | DD-471 | BYA07XED-470 | | UC-5247 | 5GA-747 | |
| C32 | 1500 | | V10710-13 | BPD-0015 | DD-153 | BYA10D15 ED-0015 | | DC5215 | 5HK-D15 | |
| C33 | 4700 | | 21EV300M04 | BPD-0047 | DD-472 | BYA10D47 ED-0047 | | UC-5347 | 5HK-D47 | |
| C34 | 1500 | | V10710-13 | BPD-0015 | DD-153 | BYA10D15 ED-0015 | | DC5215 | 5HK-D15 | |
| C35 | 680 | 3000 | | BPD-30-680 | DD30-681 | BYB07XED-680 | | DC30347 | 30HKD-T5 | |
| C36 | 6000 | 3000 | | BPD-30-470 | DD30-471 | BYB07X4 MD9-470 | | DC30347 | 30HKD-T5 | N330 |
| C37 | 56 | | | | | | | | | |
| C38 | .82 | 600 | 21EV013A24 | P488N-33 | | CUB4P82 | | GEM-6033 | 47M-P33 | |
| C39 | 4700 | 1500 | | P6488N-0047 | | EVCBD47 | | GEM-16347 | 16TM-D47 | |
| C40 | .01 | 100 | 21EV019A01 | BPD-001 | DD-103 | CUB4P1 | GP-10000 | GEM-6101 | 47M-P1 | |
| C41 | .01 | 600 | 21EV013A04 | P488N-1 | | DP-104 | CUB4P1 | GEM-601 | 47M-P1 | |
| C42 | 680 | 600 | 21EV013A28 | BPD-00068 | | DD-681 | BYA07XED-680 | UC-5268 | 5GA-768 | |
| C43 | 680 | | 21LV18A81 | BPD-00068 | | DD-681 | BYA10D68 ED-680 | UC-5268 | 5GA-768 | |
| C44 | 680 | | 21LV18A81 | BPD-00068 | | DD-681 | BYA07XED-680 | UC-5268 | 5GA-768 | |
| C45 | 680 | | 21LV18A81 | BPD-00068 | | DD-681 | BYA07XED-680 | UC-5268 | 5GA-768 | |
| C46 | .01 | 600 | 21EV013A04 | P488N-1 | | DP-104 | CUB4P1 | GEM-601 | 47M-P1 | |
| C47 | .1 | 600 | 21EV019A02 | BPD-01 | | DD-103 | CUB6S1 | GP-10000 | GEM-601 | 47M-S1 |
| C48 | .047 | 600 | 21EV024A73 | BPD-05 | | DF-503 | CUB6S47 | | GEM-6147 | 47M-S47 |
| C49 | .47 | 600 | 21EV019A16 | P488N-47 | | | CUB4P47 | | GEM-6047 | 47M-P47 |
| C50 | 27 | 5000 | | | | | DC60-270 | | | Note 2 |
| C51 | 75 | 5000 | | | | | DC60-750 | | | Note 2 |
| C52 | 10000 | 1400 | V10710-13 | | | | | CUB6S1 | GEM-1651 | 5HK-S1 |
| C53 | 1000 | 1400 | 21EV300M03 | | | | | NYB6S1 | GEM-1652 | 16TM-D1 |
| C54 | 680 | | 21LV18A81 | BPD-00068 | | DD-681 | | BYA10T68 ED-680 | UC-5268 | 5GA-768 |
| C55 | 680 | | 21LV18A81 | BPD-00068 | | DD-681 | | BYA10T68 ED-680 | UC-5268 | 5GA-768 |
| C56 | 680 | | 21LV18A81 | BPD-00068 | | DD-681 | | BYA07XED-680 | UC-5268 | 5GA-768 |
| C57 | 470 | 3000 | | | | | | BYB3DT47 HDS-470 | DC30347 | 30HKD-T5 |

Note 1. Some versions may use a .33MKF (Part #21EV003A34) in this application.
Note 2. Some versions may use a single 100MMF (Part #21EV300M24) in place of C80 and C81.

## CONTROLS

| ITEM No. | RATING: RESISTANCE | WATTS | REPLACEMENT DATA: Westinghouse PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| R1A | 15K | | 270V0023M02 | | | | UB80S1 | Picture |
| B | 1Meg | | | | | | Not Req. | Volume |
| C | Switch | | | | | | Not Req. | |
| R2A | 100K | | 270V0039M03 | B-4G | A47-100K-B | Q11-128 | U41 | Brightness |
| B | Shaft | | | Not Req. | FS-3 | Not Req. | Not Req. | |
| R3A | 2Meg | | 270V0039M04 | B-7S | A47-2Meg-S | Q11-139 | U56 | Vert. Hold |
| B | Shaft | | | Not Req. | FS-3 | Not Req. | Not Req. | |
| R4A | 60K | | 270V0039M02 | B-3S | A47-75K-S | Q11-125 | U35 | Horiz. Hold |
| B | Shaft | | | Not Req. | FS-3 | Not Req. | Not Req. | |
| R5A | 500K | 1/4 | V12709-18 | AB-4 | A47-750-S | Q11-105 | PTA751L | Quieting |
| B | Shaft | | | AK-19 | RM-3 | TQ | Not Req. | |
| R6A | 300K | | 270V0039M01 | | | | | Vert. Lin. |
| B | 5Meg | | | | | | | Sync |
| C | 5Meg | | | | | | | Height |

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING: OHMS | WATT | REPLACEMENT DATA: Westinghouse PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|
| R7 | 220K | | 250V222A24 | BTS-220K | |
| R8 | 330K | | 250V333A92 | BTS-330K | |
| R9 | 2200Ω | | | BTS-2200 | |
| R10 | 820K | | | BTS-820K | |
| R11 | 1.5Meg | | | BTS-1.5Meg | |
| R12 | 15K | | 250V421A53 | BTS-15K | |
| R13 | 220K | | 250V222A24 | BTS-220K | |
| R14 | 1800Ω | | | BTS-1800 | |
| R15 | 5600Ω | | | BTS-5600 | |
| R16 | 15K | | 250V421A53 | BTS-15K | |
| R17 | 15Meg 5% | | 250V211A56 | | |
| R18 | 1.5Meg | | 250V215A55 | BTS-1.5Meg 5% | |
| R19 | 560K 5% | | | | |
| R20 | 3900Ω | | 259V033M02 | BTS-3900 | |
| R21 | 3900Ω | | 259V033M02 | BTS-3900 | |
| R22 | 4700 | | 250V234A71 | BTS-470 | |
| R23 | 470 | | 250V234A70 | BTS-47 | |
| R24 | 8200Ω | | V9877-31 | BTS-8300 | |
| R25 | 100K 5% | | | | |
| R26 | 39000 | | 259V003M03 | | |
| R27 | 4700 | | 250V234A71 | BTS-470 | |
| R28 | 470 | | 250V234A70 | BTS-47 | |
| R29 | 4700 | | 250V234A71 | BTS-470 | |
| R30 | 1500 | | 250V215A51 | BTS-150 | |
| R31 | 47K | | 250V234A73 | BTS-47K | |
| R32 | 220Ω | | 250V232A31 | BTS-220 | |
| R33 | 3300Ω | | 250V233A32 | BTS-3300 | |
| R34 | 12K | | 250V232A23 | BTS-12K | |
| R35 | 100K | | 250V231A05 | BTS-100K | |
| R36 | 3900Ω | 2 | 250V432A52 | BTS-3900 | |
| R37 | 3300Ω | 2 | 250V432A33 | BTS-3300 | |
| R38 | 15K | 2 | 250V421A53 | BTS-15K | |
| R39 | 150K | | 250V215A54 | BTS-150K | |
| R40 | 150K | | 250V215A54 | BTS-150K | |
| R41 | 1Meg | | 250V231A05 | BTS-1Meg | |
| R42 | 68K | | 250V225A53 | BTS-68K | |
| R43 | 13K 5% | | | BTS-13K 5% | |
| R44 | 56K 5% | 1 | | BTA-56K 5% | Note 2 |
| R45 | 100K | | 250V231A04 | BTS-100K | |
| R46 | 100K | | 250V231A04 | BTS-100K | |
| R47 | 4700 | | 250V234A71 | BTS-470 | |
| R48 | 1Meg | | 250V231A05 | BTS-1Meg | |
| R49 | 12K | | 250V232A23 | BTS-12K | |
| R50 | 22K | 2 | | BTS-22K | |

| ITEM No. | RATING: OHMS | WATT | REPLACEMENT DATA: PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|
| R51 | 680 5% | | | BTS-68 5% | |
| R52 | 370K | | 250V223A74 | BTS-370K | |
| R53 | 8900Ω | | 250V236A52 | BTS-8900 | |
| R54 | 1Meg | | 250V231A05 | BTS-1Meg | |
| R55 | 56K | | 250V226A83 | BTS-56K | |
| R56 | 22K | | 250V223A23 | BTS-22K | |
| R57 | 39K | | 250V223A35 | BTS-39K | |
| R58 | 10K | 2 | 250V421A05 | BTS-10K | |
| R59 | 180K | | 250V231A48 | BTS-180K | |
| R60 | 15K 5% | | 250V211A53 | BTS-15K 5% | |
| R61 | 100Ω | | 250V232A54 | BTS-100Ω | |
| R62 | 1Meg | | 250V231A05 | BTS-1Meg | |
| R63 | 150K | | 250V231A51 | BTS-150K | |
| R64 | 100K | | 250V231A04 | BTS-100K | Note 1 |
| R65 | 100Ω | | 250V233A51 | BTS-100 | |
| R66 | 470K | | 250V234A76 | BTS-470K | |
| R67 | 560Ω | | 250V225A61 | | |
| R68 | 680Ω | | 250V225A61 | | |
| R69 | 680K | | 250V226A84 | | |
| R70 | 1Meg | | 250V221A05 | | |
| R71 | 22K | | 250V223A23 | BTS-22K | |
| R72 | 220K | | 250V222A24 | | |
| R73 | 470K | | 250V234A76 | | |
| R74 | 47K | | 250V224A73 | | |
| R75 | 1000Ω | | 250V233A10 | | |
| R76 | 56K | 1 | 250V225A63 | | |
| R77 | 330K 5% | | 250V231A34 | BTS-220K 5% | |
| R78 | 5900Ω | | 250V235A59 | | |
| R79 | 56K | | 250V225A53 | | |
| R80 | 4000Ω | | 250V232A02 | BTS-4000 | |
| R81 | 150Ω | | 250V215A51 | BTS-150 | |
| R82 | 470K | | 250V234A74 | BTS-470K | |
| R83 | 6800Ω | 4 | V1271-2 | | |
| R84 | 22K | | 250V222A23 | BTS-22K | |
| R85 | 2200Ω | | | BTS-2300 | |
| R86 | 2200Ω | | 250V222A22 | BTS-2200 | |
| R87 | 100K | 1 | V9227-18 | BTA-100K | |
| R88 | 4.7Ω | | 250V094A79 | BW1-4.7 | |
| R89 | 2200Ω | 15 | 250V178M02 | 2D-2200 | Note 2 |
| R90 | 1500Ω | 4 | 250V290M01 | PW4-1500 | |
| R91 | 180Ω | 10 | 250V017M01 | | |
| R92 | 7.5Ω | | 250V092M01 | FR7.5-7.5 | |
| R93 | 330K | | | BTS-330K | |
| R94 | 5Ω | 25 | 250V010M01 | | Note 3 |

Note 1: Some versions may use a 68K resistor in this application.
Note 2: Some versions may use a 18000 ISW resistor in this application.
Note 3: In UHF receivers with pilot light, this is a 25 watt 2 section resistor
One section 34Ω, one section 41Ω (Part #25V015M02).

## TRANSFORMERS (SWEEP CIRCUITS)

| ITEM No. | USE | REPLACEMENT DATA: Westinghouse PART No. | Hallicrafters PART No. | Merit PART No. | RCA TYPE No. | Ram PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
|---|---|---|---|---|---|---|---|---|---|
| T1 | Horiz. Output Trans. | 423V003M13 | | | | | | FLY-98* | A-109X |
| T2 | Vert. Output Trans. | 430V005M02 | 21W02 ② | | | | | | A-109X |
| | | 430V005M12 | 21W02 ② | | | | | | A-109X |
| T3A | Yoke(80°)Horiz(30MH) | 490V000M01 | DF801 ③ | MDF-88 ③ | 33DH3 ③ | T90F19/43 ③④ | DY-16A ③ | Y-16 ③ | Y-41 ③ |
| B | Vert(40MH) | | | | | | | | |
| | Yoke Assembly | 759V007M01 ① | | | | | | | |
| | | V15898-1 ③ | | | | | | | YCI ③ |
| | | 758V014M01 ③ | | | | | | | CL1 ③ |

① Alternate part number.
② Use 1k in 1 turns ratio.
③ Includes resistance R87 and R88.
④ Yoke rear cover and centering device.
⑤ Yoke clamp.
⑥ Use original rear cover and centering device.
⑦ Use original horiz. yoke damping set if necessary.

### *HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

| ORIGINAL TERMINAL CONNECTIONS | Hallicrafters Replacement Connections | Merit Replacement Connections | RCA Replacement Connections | Ram Replacement Connections | Stancor Replacement Connections | Thordarson Replacement Connections | Triad Replacement Connections |
|---|---|---|---|---|---|---|---|
| 8 | | | | | | 6 | |
| 4 | | | | | | 4 | |
| T | | | | | | T | |
| 3 | | | | | | 3 | |
| 2 | | | | | | 2 | |
| 1 | | | | | | 1 | |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE: PRI. | SEC. | REPLACEMENT DATA: Westinghouse PART No. | Hallicrafters PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T4 | 7000Ω | 3-4Ω | 430V036M01 | EU13 | A-3921 | A-3870 | 34653 | S-7X | |

## SPEAKER

| ITEM No. | TYPE: SIZE | FIELD | V. C. IMP | REPLACEMENT DATA: Westinghouse PART No. | QUAM PART No. | NOTES |
|---|---|---|---|---|---|---|
| SP1 | 5" | PM | 3-4Ω | V-18597-1 ① | 5A01 | |
| | 5" | PM | 3-4Ω | 570V017M01 ② | 5A07 | |
| | 5" | PM | 3-4Ω | 570V019M01 ③ | 5A07 | |
| | 8" | PM | 3-4Ω | 570V018M01 ④ | 6A1 | |
| | 8" | PM | 3-4Ω | 570V018M02 ⑤ | 6A1 | |
| | 6" | PM | 3-4Ω | V-18599-1 ⑥ | 8A | |
| | 6" | PM | 3-4Ω | V-18599-2 ⑦ | 8A1 | |
| | 8" | PM | | V-18438-3 ⑧ | | |
| | 8" | PM | | 570V018M02 ⑨ | | |
| | 8" | PM | | 570V009M01 ⑩ | | |

① Used in models KE171UB, KE171UB, KE171UBB, KE171UBB, KE171UA, KE171UBA, KE171UBA, KE171UB, KE171UBA.
② Used in models KE171BC, KE171BC, KE171BCA, KE171BCB, KE171BCB, KE171BCA, KE171BCA, KE171BCA

# PARTS LIST AND DESCRIPTIONS (Continued)

## RECTIFIERS

| ITEM No. | RATING | REPLACEMENT DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CURRENT (Measured) | Westinghouse PART No. | FEDERAL PART No. | GENERAL ELECTRIC PART No. | INTERNATIONAL PART No. | MALLORY PART No. | RADIO RECEPTOR PART No. | SARKES TARZIAN PART No. |
| M1 | .280A | V-15920-2 ① | 1367AP ① | 1N1007 ② | RS350SL ① | 6S350 ① | 6QA2 ① | 350A ① |
| M2 | .280A | V-15920-2 ① | 1367AP ① | 1N1007 ② | RS350SL ① | 6S350 ① | 6QA2 ① | 350A ① |

① Selenium Type. ② Germanium Type.

## CRYSTAL DIODES

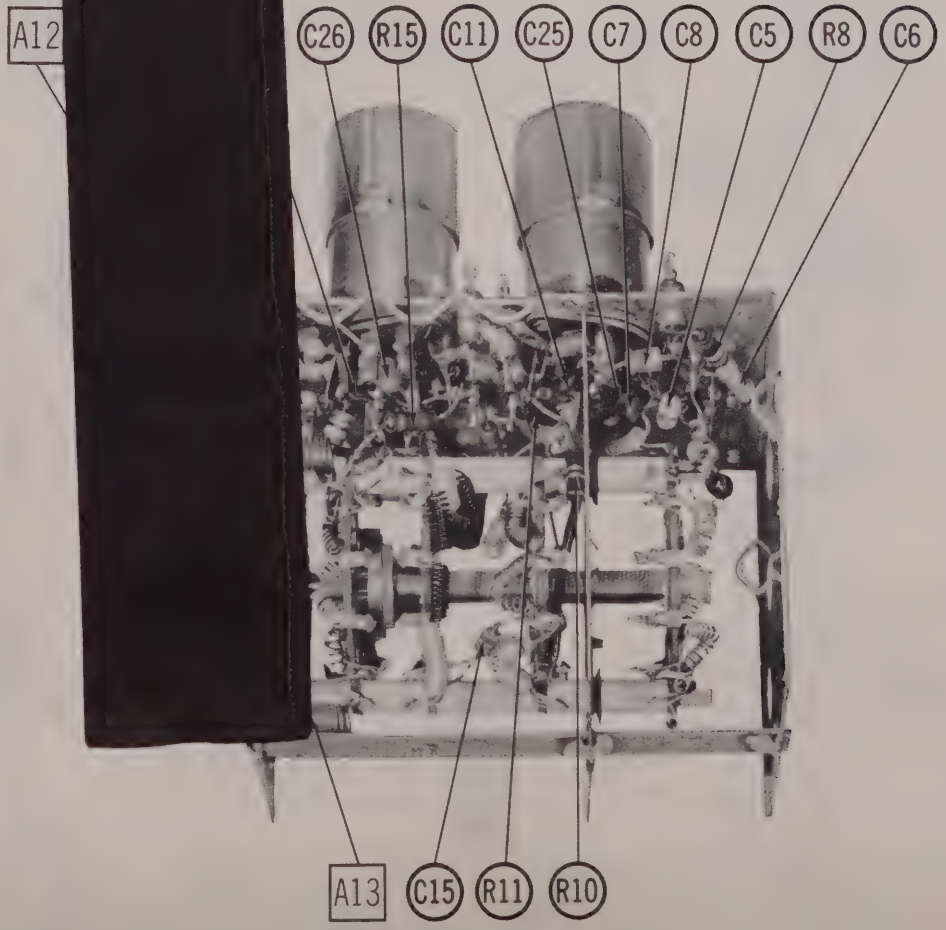
| ITEM No. | ORIG. TYPE | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|
| | | Westinghouse PART No. | SYLVANIA PART No. | |
| M3 | *1N295 | V10916-3 | 1N60 | Video Detector (Pigtail) |

* Alternate types CK706A and 1N64 may be used in this application.

## MISCELLANEOUS

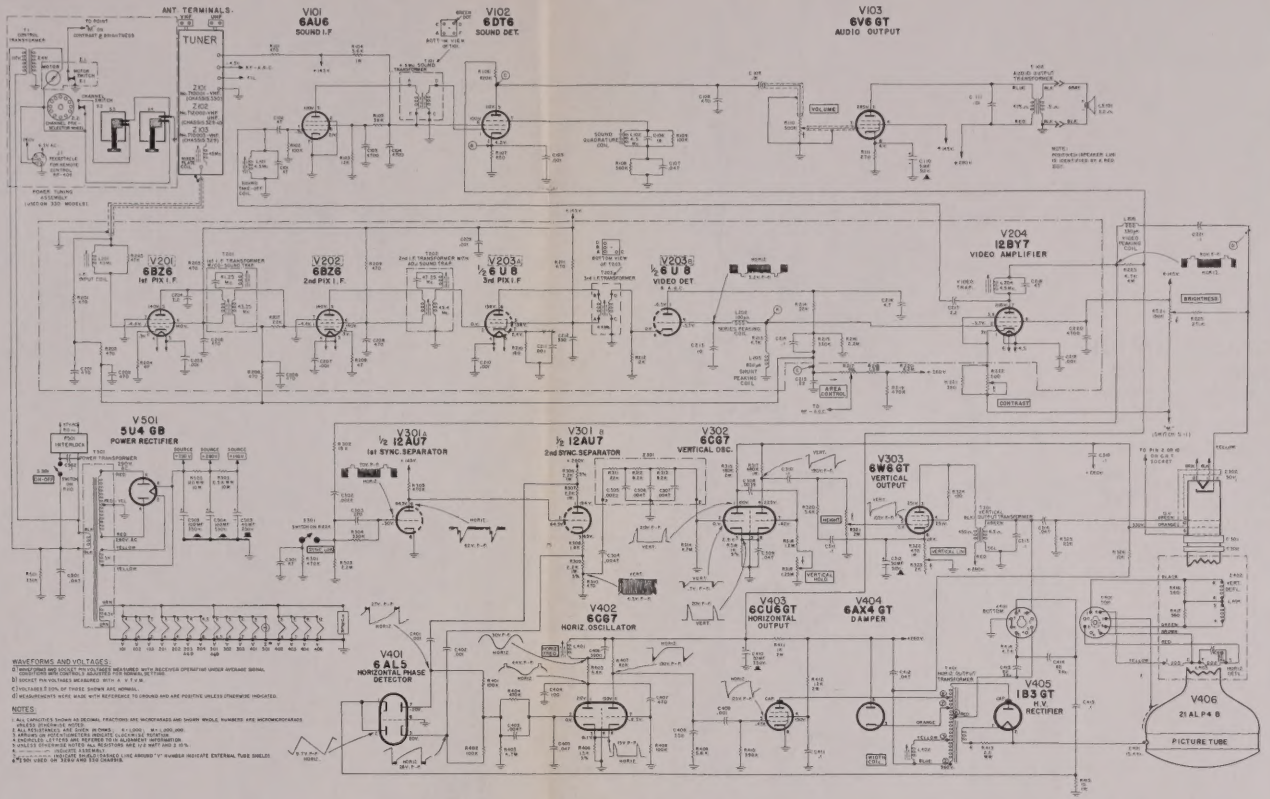
| ITEM No. | PART NAME | Westinghouse PART No. | NOTES |
|---|---|---|---|
| M4 | Tuner | 470V001M01 | VHF, Code #684, Alternate Code #119. |
| | Tuner | 470V008M03 | VHF |
| | Tuner | 470V003M01 | VHF |
| | Tuner | 470V005M01 | VHF |
| | Tuner | 470V007M01 | VHF |
| | Tuner | 475V007M03 | UHF/VHF, Consists of UHF Tuner Part #474V007M01 and VHF Tuner Part #473V007M01. |
| | Tuner | 475V001M01 | UHF/VHF, Consists of UHF Tuner Part #474V001M01 and VHF Tuner Part #473V001M01. |
| | Tuner | 475V007M01 | UHF/VHF, Consists of UHF Tuner Part #474V007M01 and VHF Tuner Part #473V007M01. |
| M5 | Crystal Det. Ass'y. | 235V005M01 | Includes 4th Video IF, Caps., Series Peaking Coil and M3. |
| M6 | Centering Device | V15966-1 | Includes Yoke Cover. |
| M7 | Ion Trap | 757V501A04 | |
| | Yoke Clamp | 768V014M01 | |
| | Printed Board | 350V010M01 | Video IF |
| | Printed Board | 350V011M01 | Video, Sound, Sync. |
| | Safety Glass | 630V002M01 | Tinted, Models H21K113B, 114B, 185, A, B, C, E, 186, A, B, 187, A, B, 194, C, H21KR113A, F, 114A, F, 115A, 116A, 188, A, B, H, 189, A, G, H, H21KU113A, 114A, 115A, 116A, 186, 194, A, H21KRU188C, 189C, 190, 191, H21T101B, 107A, 108A, H21TR181, A, C, 182, A, B, C, 183, A, B, C, 184A, C, H, H21TU101A, 107A, 108A, H21TRU183. |
| | Safety Glass | 630V001M01 | Clear, Models H21T180, A, B, H21K111A, 112A, 112B. |
| | Safety Glass | 630V004M01 | Clear, Models H24KR126A, F, H24K126B, E. |
| | Safety Glass | 630V004M01 | Tinted, Models H24K127B, 128B, H24KR127F. |
| | Knob | 550V003M03 | VHF Channel Selector, 12 Position, Models H21KU13A, B, 114A, B, 115, 116, 186, A, B, 187, A, B, H21KR115A, 116A, 188, A, B, H, 189, A, 190, 191, H21T107A, B, 108A, B, H21TR181A, C, 182A, B, C, 183, A, B, C, G, H, H24K127B, 128B, H24KR127F, H21KR113F, 114F. |
| | Knob | 550V003M05 | VHF Channel Selector, 12 Position, Models H21K101B, 111A, 112A, B, 185, A, B, C, E, 194, C, H21T180, A, B, H24KR126A, B. |
| | Knob | 550V002M01 | Channel Selector, 13 Position, Models H21KU111A, 113A, 114A, 115, A, 116, A, 186, A, B, 187A, B, 194, H21KRU188A, C, 189A, C, 190, 191, H21T180, H21TU101A, 107A, 108A, H21TRU181, 182, 183, H24KU126A. |
| | Knob | V-15813-10 | Channel Selector, 13 Position, Models H21KU112B, 114B, H21TU107B, 108B, H24KU126B, 127B, 128B. |
| | Knob | 550V022M02 | Channel Selector, 13 Position, Models H21KU112A, 185, A, H21T180, A, B, H24KU126A. |
| | Knob | V-15667-1 | UHF Tuning/VHF Fine Tuning, Models H21K111A, 112A, B, 113B, 114A, 115, 116, 185, A, B, C, E, 186, A, B, 187, A, B, 194, C, H21KR113A, F, 114A, F, 115A, 116, 188, A, B, H, 189, A, G, H, 190, 191, H21KU115, 116, H21T101B, 107A, B, 108A, B, 180, A, B, H21TR181A, C, 182A, B, C, 183A, B, C, 184A, C, H24K126B, E, 127B, H24KR126A, F, H24KU126B, 127B, 128B, H24KR127F. |
| | Knob | 550V021M01 | UHF Tuning/VHF Fine Tuning, Models H21KRU190, 191, H21KU112A, 113A, 114A, 115A, 116A, 186, 194, A, H21KRU188C, 189C, H21TRU181, A, 182, A, 183, A, 184A, H21TU101A, 107A, 180A, H24KU126A, 186. |
| | Knob | V-15671-6 | VHF Fine Tuning, Models H21KU114B, H21T107B, 108B, H24KU127B, 128B. |
| | Knob | V-15671-7 | VHF Fine Tuning, Models H21KU112B, H24KU126B. |
| | Knob | 550V020M01 | UHF Dial, Models H21KU111A, 112A, 113A, 114A, 115, A, 116, A, 194, A, H21TU101A, 107A, 108A, 180, A, H21KRU188C, 189C, H21TRU181, A, 182, A, 183, A, 184A, H24KU126A, 186. |
| | Knob | V-15668-1 | UHF Dial, Models H21KU112B, 114B, H21TU107B, 108B, H24KU126B, 127B, 128B. |
| | Knob | V-15812-6 | Picture, Models H21K111A, 112A, B, 113B, 114B, H21KR113A, F, 114A, F, 115A, 116A, H21KU111A, 112A, B, 113A, B, 114A, B, 115A, 116A, H21T101B, 107A, B, 108A, B, H21TU101A, 107A, B, 108A, B, H24KR126A, F, 127B, 128B, H24KU126B, 127B, 128B, H24KR127F. |
| | Knob | 550V034M01 | Picture, Models H21K185A, B, C, E, 186, A, B, 187, A, B, 194, C, H21KR188A, B, H, 189, A, G, H, 190, 191, 21KRU188C, 189C, 190, 191, H21KU186, 194, A, H21T180, A, B, H21TR181A, C, 182A, B, C, 183A, B, C, 184A, C, H21TRU183. |
| | Knob | 550V002M01 | Controls (3 Used) Models H21K111A, 114B, 116, 187, A, B, 194, C, H21KR114A, F, 116A, 189, A, G, H, H21KU114A, 116A, 194, A, H21T101B, 107A, 108A, 182A, H21KRU189C, H21TR182B, C, H21TU101A, 107A, 108A, H24K128B. |
| | Knob | 550V002M02 | Controls (3 Used) Models H21K112A, B, 113B, 115, 127B, 185, A, B, C, E, 186, A, B, H21KRU188, C, H21KU113A, 114B, 115, A, 186, H21KR113A, F, 115A, 188, A, B, H. H21T180, A, B, H21TR181A, H24KR126A, F, H24KR127F. |
| | Knob | 550V002M04 | Controls (3 Used) Models H21KR190, H21KRU190, H21TR183A, C, H21TRU183. |
| | Knob | 550V002M03 | Controls (3 Used) Models H21KR191, H21KRU191, H21TR184A, C. |
| | Knob | V-15810-6 | On-Off Volume, Models H21K113B, 114B, H21KU115A, 116A, H21KR113A, F, 114A, F, 115A, 116A, H21T107A, B, 108A, B, 114B, H21TU107A, B, 108A, B, H24K127B, 128B, H24KR127F. |
| | Knob | V-15671-6 | On-Off Volume, Models H21K186, 187, H21KR188, A, H, 189, A, G, H, 190, 191, H21KRU188C, 189C, 190, 191, H21TR181A, C, 182A, B, C, 183A, B, C, 184A, C, H21TRU183. |
| | Knob | V-15671-7 | On-Off Volume, Models H21K112A, B, 185, A, B, C, E, 186A, B, 187A, B, 194, C, H21KU112A, B, 194, A, H21T180, A, B, H24KR126A, H24K126B, E. |
| | Knob | V-15810-7 | On-Off Volume, Models H21K111A, H21T101A, H21TU101A, H24KR126F. |

RF TUNER-LEFT SIDE



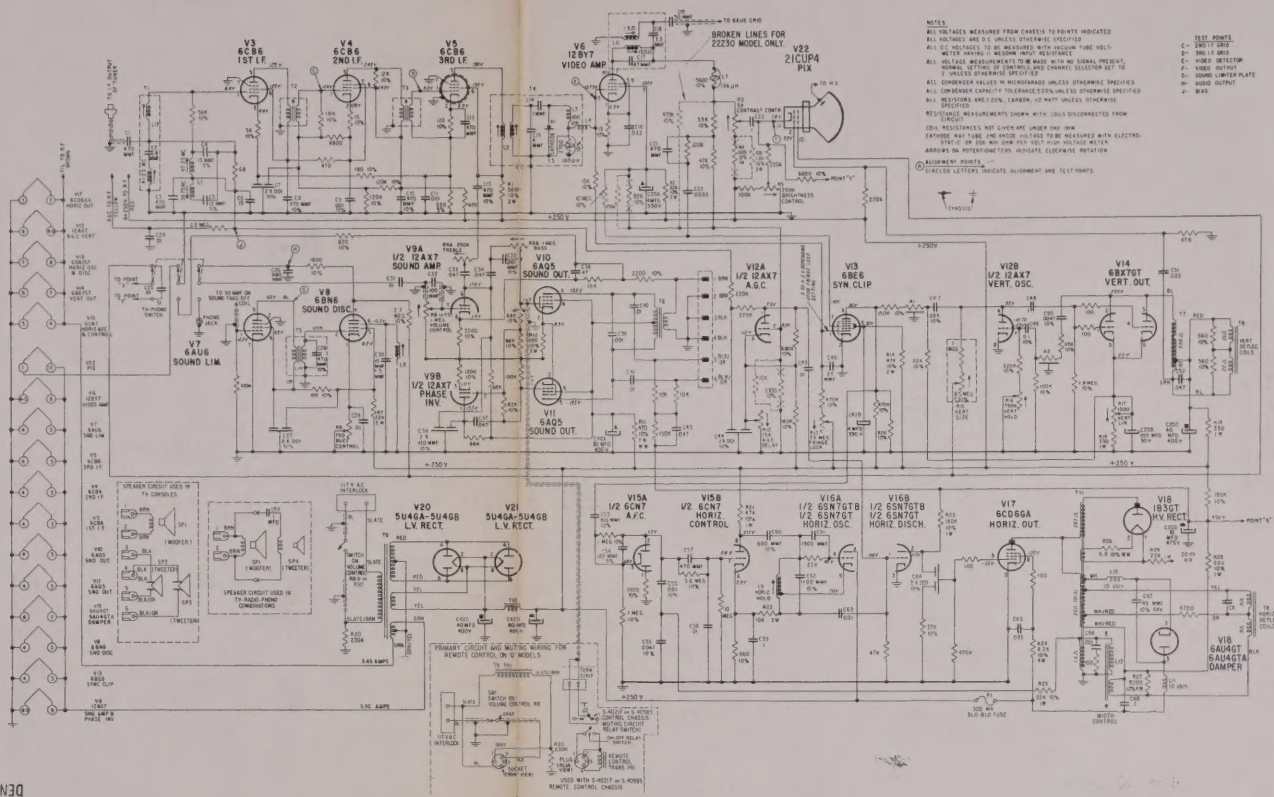

RF TUNER-RIGHT SIDE

| HOFFMAN MODELS | CHASSIS |
|---|---|
| 1191, U | 329, U |
| 1201, U | 330, U |
| 1211, U | 329, U |
| 3241, U | 329, U |
| 3251, U | 330, U |




SCHEMATIC COURTESY OF HOFFMAN RADIO-DIVISION OF HOFFMAN ELECTRONICS CORP.

| ZENITH MODELS | CHASSIS |
|---|---|
| Z2359EZ | 22Z30 |
| Z2359RZ | 22Z30 |
| Z2359Z | 22Z30 |
| Z2360RZ | 22Z30 |
| Z3012HZ | 22Z30Q |
| Z3012RZ | 22Z30Q |
| Z3014HZ | 22Z30Q |
| Z3014RZ | 22Z30Q |


V3 6CB6 1ST I.F.
V4 6CB6 2ND I.F.
V5 6CB6 3RD I.F.
V6 12BY7 VIDEO AMP.
V22 21CUP4 PIX
BROKEN LINES FOR 22Z30 MODEL ONLY.
V9A 1/2 12AX7 SOUND AMP.
V10 6AQ5 SOUND OUT.
V9B 1/2 12AX7 PHASE INV.
V11 6AQ5 SOUND OUT.
V8 6BN6 SOUND DISC.
V7 6AU6 SOUND LIM.
V12A 1/2 12AX7 A.G.C.
V13 6BE6 SYN. CLIP
V12B 1/2 12AX7 VERT. OSC.
V14 6BK7GT VERT. OUT.
V20 5U4GA-5U4GB L.V. RECT.
V21 5U4GA-5U4GB L.V. RECT.
V15A 1/2 6CN7 A.F.C.
V15B 1/2 6CN7 HORIZ. CONTROL
V16A 1/2 6SN7GTB 1/2 6SN7GT HORIZ. OSC.
V16B 1/2 6SN7GTB 1/2 6SN7GT HORIZ. DISCH.
V17 6CD6GA HORIZ. OUT.
V18 1B3GT H.V. RECT.
V18 6AU4GT 6AU4GTA DAMPER
SPEAKER CIRCUIT USED IN TV CONSOLES
SPEAKER CIRCUIT USED IN TV-RADIO-PHONO COMBINATIONS
PRIMARY CIRCUIT AND MUTING WIRING FOR REMOTE CONTROL ON 'Q' MODELS
USED WITH 5-40217 or 5-40985 REMOTE CONTROL CHASSIS
+250 V
+252V
+350 V
5.45 AMPS
5.90 AMPS

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L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

SCHEMATIC COURTESY OF ZENITH RADIO CORPORATION

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